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## ORIGINAL ARTICLES.

### ARE COMPLETE CASTRATES CAPABLE OF PROCREATION?[1]


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THE subject that I have selected for your consideration may perhaps cause a smile on the ground that it is one of scientific curiosity rather than of practical worth; but a moment's reflection will, I think, show you that it is of value, if not from the purely surgical side, at least from the standpoint of forensic medicine.

Scattered over the pages of medical literature are instances in which the legitimacy of a child has been called into question on account of a suspicion as to its paternity, and it oftentimes becomes of importance not only for the good name of both woman and child, but also sometimes for the inheritance of estates, that this question should be solved. While we admit that the absence of testes in the male throws a strong doubt upon the legitimacy of the child, I myself believe that there is some evidence within certain limits to support the view that a man who is deficient in both of his testes may yet be the father of his child, and I ask your consideration, first, in order to detail the experiments bearing upon this point, which have been made on animals, and, second, in adopting the deductive method of reasoning to take up those cases in which men who have become eunuchs have yet been reputed to be fathers of children.

The possibility that entirely castrated animals may within certain limits be capable of procreation is as old as the days of Varro, who, in his book "De re Rustica," stated that he had "found something written of these animals (to wit, bulls) that is noteworthy; that even when the testes are abstracted, if they are put at once to cow they are capable of procreation." (Liber ii, 1619.) Aristotle, also, in his "History of Animals," Book iii, says: "And it has happened that a bull has begotten young if admitted to the female immediately after castration." Whatever we may think of the scientific knowledge of the ancients, there is no reason to doubt the accuracy of their statements; they were acute observers, and so far as their eyes were of any use they knew what they were talking about.

Passing on from the Greek and Roman writers to the Arabian school of medicine, I have not been able to trace any evidence whatever that this subject was studied, possibly for the reason that the Arabians, the Saracens, and the Moors were not prone to practise castration either upon man or beast.

The next mention of this subject which I can find is contained in the *American Intelligencer*, for the year 1838, in an article, entitled "Note on the Power of Procreating after Castration": "A question has been asked, whether, if a man be castrated after the age of puberty he may not be able for a few days after the operation to impregnate with the sperm contained in the seminal ducts and vesicles. . . . This has been generally doubted, both as regards animals and man, but there is no question of the fact in the case of the former. . . . We have recently obtained the following information on this point: A valued friend of the editor (Dr. Pue), who practised in Baltimore, has furnished him with many facts of the kind which fell under his own observation or that of his friends. In one case a boar was observed on one side of a hedge in a field of his farm striving to get at some sows in heat on the other side. The boar was castrated and no inconvenience being apprehended he was turned loose into the field with the sows. In five minutes after the operation he had intercourse with one of the sows and subsequently with others. The first sow brought forth a litter, the young marked like the sire. None of the others was impregnated.

"In another case, after a horse had been castrated, it was recollected that the yard had not been washed, which it seems is looked upon as advisable. To save trouble it was suggested that the same effect might be produced by putting him to a mare then in the stable and in heat. This was done and in due time the mare brought forth a foal unequivocally the result of this sexual union.

"A gentleman who is a great breeder of horses in Saratoga County, New York (Mr. Walton Hamilton), informed the editor's friend, Nicholas P. Frist, Esq., United States Consul at Havana, that he had known several instances of impregnation after castration."

In the same journal the same year is another article on "The Power of Procreating after Castra-

[1] Read before the American Association of Genito-Urinary Surgeons, June, 1898.

tion," which contains a letter addressed to Professor Dunglison by Joseph Warrington, Esq., in which he says: "In looking over a recent number of the *American Library and Intelligencer* I perceived some notices of occasional instances of the capability in animals to procreate after castration. Although contrary to the general impression that this function is immediately destroyed by the removal of the testes, I am prepared to credit the statement by an observation which I made several years since. A sow in heat had left the herd of a neighboring farm, and visited that on which I then resided, in search of a boar, which having, as was supposed, served the purpose of impregnating all the sows of that and the adjoining farms had been fully castrated two days before this visit. With nearly his accustomed energy, however, he covered the sow, which, without further coition, ceased to be in heat, and in due time produced a litter of pigs. The barrow from that period never evinced either inclination or ability for sexual intercourse."

In similar statements which have been made not only by ancient but by modern authors, it is noticeable that no particular period is assigned within which the fertility of the procreating powers is retained; and while it would seem very probable that the power is not entirely lost for some little while after the mutilation has taken place, we are unable to say up to what time that power exists.

The next series of experiments which I have to present are those of Obolonsky,[1] who experimented upon two dogs, in both of which animals the testes were entirely removed. In the first dog the secretion of the vesiculæ seminales was examined *seven days* after castration, when spermatozoa were found in great quantity, but without motion. On the addition of a weak solution of bicarbonate of soda, however, the movement of the spermatozoa became quite lively and they appeared to be perfectly normal. In this dog the external wound of operation had not entirely healed. In the second, the wound had entirely healed, the examination being made *thirty-one days* after the operation. The contents of the vesiculæ seminales showed abundant spermatozoa, but less in quantity than in the first case. At first they were without motion, but upon adding a weak solution of bicarbonate of soda they became quite lively. So far as the microscopic appearances went they were perfectly normal, and Obolonsky is of the opinion that had the dog at that time indulged in coitus he would, everything else being equal, have proved fruitful.

The next series of experiments were those made by Masuraca.[1] His experiments were nineteen in number, made upon fourteen animals, seven of which were dogs, four cats, and three guinea-pigs. The technic consisted in removal of the testes by a transverse incision into the scrotum, and after removal the cord and the vasa deferentia were ligated and the wound dressed antiseptically. The only exception was in the case of the guinea-pigs, in whom, the testes being in the belly, no ligation was made; otherwise, the procedure was the same as in the other cases. Death was induced by hanging. In all the subjects of the experiments spermatozoa were found in the epididymis. Of the seven dogs that were experimented on, the first was killed twenty-four hours after the operation. In the vasa deferentia normal spermatozoa were found, few in number and endowed with motion. The second dog was also killed twenty four hours after the operation. In it abundant normal spermatozoa were found which were for the most part endowed with movement. The third dog was killed three days after the operation. In it normal spermatozoa were found, of medium quantity and without motion. It is worthy of note that in the hanging of this dog a white milky drop came from the urethra which, on being examined, contained no spermatozoa whatever. The fourth dog was killed sixty-four hours after the operation. Abundant spermatozoa were found, which were normal in appearance and endowed with motion. In this dog, also, during the process of hanging, a white drop came from the urethra in which no spermatozoa were found. The fifth dog was hanged four days after the operation. In it a moderate number of normal spermatozoa were found, but they were all motionless. In the sixth, the animal was killed five days after the operation. Only a few spermatozoa were found, but these few were normal in appearance and endowed with feeble movement. The seventh dog was killed seven days after the operation. In this animal the vasa deferentia were empty. Only one single body which looked like a spermatozoon was found which was endowed with a head. The body was thickened; it was crumpled in appearance and seemed to have become granular.

Of the cats, which were four in number, one was killed four days after the operation. During the hanging the bladder was emptied and a milk-white drop exuded from the urethra, which, upon examination, was found to be full of normal spermatozoa. The hanging was interrupted and the animal resuscitated. This same animal was hanged upon the next day, five days after the operation. Abundant spermatozoa were found in the vasa deferentia and these

[1] *Vierteljahrschrift für Gerichtlichen Medezin*, N. F. Bd. 48, p. 362, 1888.

[1] "Sopra un Importante Questione Relative alla Castrazione."

were for the most part endowed with motion. The second cat was hanged six days after the operation. In this animal only few spermatozoa were found, some of which were endowed with feeble motion. The third cat was despatched seven days after the operation. In this animal the spermatozoa were present in large quantities, but they were not endowed with motion. The fourth cat was hanged twenty-five days after the operation and in this animal no spermatozoa were found, nor were there any bodies which looked at all like spermatozoa.

Of the three guinea-pigs, the first one was killed four days after the operation. In the vasa deferentia of this animal abundant spermatozoa were found but they were all straight and motionless. The second guinea-pig was hanged six days after the operation. During the hanging a large milk-white drop escaped from the urethra, which, upon examination, was found to contain numerous cellular elements of various size and abundant spermatozoa, which were straight and not endowed with motion. In the case of this animal, the hanging was interrupted; it was resuscitated and was used again for the third experiment, when it was killed eight days after the operation. During suspension many milk-white drops exuded from the urethra, which were found to contain an abundant number of cells with spermatozoa, having the general appearance that was present in this same animal two days before. These spermatozoa were not endowed with motion. Although an effort was made to resuscitate this animal, it was unsuccessful. The third guinea-pig was used for an extended series of experiments, being hanged no less than four times before it was finally despatched. The first time it was hanged ten days after the operation and during suspension an abundant milky secretion exuded from the urethra. This secretion was found to contain numerous cellular elements and an abundant quantity of straight and motionless spermatozoa. Some of these spermatozoa were seen to have their tails curled and to be slightly thicker than normal. As noted above, this animal was cut down before it was completely dead and was resuscitated without any trouble.

The fifth experiment (third guinea-pig) was made fourteen days after the operation. As before, the usual drop appeared at the urethra and this drop revealed, upon examination, an abundant number of straight, motionless spermatozoa, with clear outlines. This animal was again resuscitated and used as the subject for the sixth experiment. It was again suspended seventeen days after the operation. The usual urethral drop made its appearance, which, upon examination, showed granular degeneration of the epithelial cells, free fat globules, and some motionless straight spermatozoa. The same animal served as the subject for the seventh and final experiment, twenty days after castration. The usual urethral drop appeared during suspension, which, under the microscope, showed epithelial elements, no spermatozoa, and some white dodecahedral crystals which upon the addition of acetic acid took a crystalline form resembling a Latin cross (Boettcher's crystals?).

These experiments are interesting because so far as animals are concerned there seems to be a difference in the viability of the spermatozoa after complete castration. In the dogs, which were seven in number, and in whom seven separate experiments had been made, spermatozoa were found on the sixth day, few in number it is true and with feeble movement, but still spermatozoa, proving that the semen was more or less fruitful. On the seventh day we practically for the first time lose sight of the spermatozoa. The dog has now become sterile, as, of course, he would sooner or later become on the loss of his testes. With regard to the cats, there seems to be a wider limit. These cats were four in number, und upon these four, five experiments were made. Up to the end of the first seven days spermatozoa were abundant, but without motion.

It is to be regretted that in all these cases where spermatozoa, although present, were motionless, Obolonsky's experiment of adding a weak alkaline solution to the semen was not tried, as it is very possible that the spermatozoa would have become endowed with motion and the semen become practically a fertile fluid. Probably this takes place in the natural condition when the spermatozoa come in contact with the alkaline secretion of the uterus, and it is likely that the secretion of this organ is alkaline for the very purpose of securing the viability of the spermatozoa and the consequent fertility of the semen.

In the guinea-pigs we find a curious condition of affairs. Three of these animals were used for the purpose of experiment and on these three animals seven experiments were made, two upon one animal and four upon another. In these three animals, although the spermatozoa were fairly abundant up to the fourteenth day after the castration, in none of them was the spermatozoa found to be endowed with motion outside of the body; and in two experiments—the ones made upon the seventeenth and twentieth day after the operation—degenerative changes had taken place. In one—that is on the twenty-fifth day—the spermatozoa were entirely absent, and on the seventeenth day, although they were present, it is very evident that they were not normal, and probably not fertile.

Let us turn now from animals to man and note

what has been found in those individuals who have been castratedas regards the question of their fertility or sterility. Krugelstein, in Henke's *Zeitschrift der Staatsarzneikunde*, 1842, relates the case of a merchant who had both testes removed for some disease. The wound healed and he married. His wife became pregnant. In addition to this case others are noted, but as in many of them I have been unable to consult the originals, I have omitted doing anything further than report them by name. I refer to the cases of Cornelius Consentinus of Bohn; of Bellefontaine, of Zipans, and of Sanchez.

Sedillot, in his "Manuel Complet de Medecine Legale," borrows a case from Boyer, in which the latter was consulted by a man from whom he had at one time or another removed both testes for sarcocele. After recovery from the second operation he continued to cohabit with his wife, who became pregnant a short time afterward. The man, being somewhat disturbed, consulted M. Boyer, who in order not to "disturb the peace of the household," told the man that such a thing was quite possible, but added that it was his last child and if any others appeared he might be quite sure that they did not belong to him.

Krahmer[1] reports a case of a young peasant, twenty-two years of age, who performed self-castration with a razor. Both testes were entirely and thoroughly removed. Eleven to twelve days after the operation he had a seminal emission during his sleep. Unfortunately no examination was made for spermatozoa and it is only mentioned here as instancing the possibility of a seminal emission occurring twelve days after the operation of castration.

The last of all is the case which has been reported by Princeteau in the *Annales des Maladies des Organes Genito-Urinares* for 1890, taken from the "Proceedings of La Société d'Anatomie et de Physiologie de Bordeaux," in which the patient, a young man, had lost both testicles by castration from tuberculous disease and in whom upon examination no trace or fragments of these organs could be found. Notwithstanding this fact the young man frequently practised coition, and had ejaculation of a fluid containing spermatozoa, of which Princeteau showed some preparations.

Having now gone over all the cases, experimental as well as clinical, which have occurred in animals as well as men which have been accessible to me, let us group them together and see what deductions we can draw from them. First, as regards the animals. Those taken from ancient authors are, of course, of no service excepting as being confirmatory of what has been subsequently proved by direct experiments. In these cases it is to be noted that no particular time has been assigned as a limit beyond which spermatozoa are not found until we come to the letter which was published in the *American Medical Library and Intelligencer* for 1838, by Mr. Joseph Warrington, with regard to the boar. He apparently was able to impregnate a sow two days after he had been fully castrated. Then come the experiments of Obolonsky and Masuraca, in which some effort is made to give a time-limit within which spermatozoa are found in the seminal secretion after complete castration. In Obolonsky's cases, which only include two experiments, the longest limit is thirty-one days after castration, a far longer time than Masuraca had been able to note in his experiments. If you remember in Masuraca's experiments on dogs, the viability of the spermatozoa in the dog appeared to be extinct after the fifth day, for although at that date the spermatozoa were normal in appearance, they were but few in number and endowed with feeble movement. In the dog which was killed on the seventh day after the operation, the vesiculæ seminales were found to be devoid of spermatozoa. I should be inclined, therefore, to regard with some suspicion the experiment of Obolonsky, in which he found viable spermatozoa thirty-one days after castration, and to believe that some mistake had been made as to the number of days after castration in which the examination for spermatozoa had been made.

As regards the cats, four of which were experimented upon, up to the end of the first week (seven days) spermatozoa, perfectly normal in appearance but without motion, were found, but no examination was made between the seventh and the twenty-fifth day afterward on the last cat. In this animal no spermatozoa, were found, nor were there any bodies which looked at all like them. In the cat, therefore, as well as in the dog, we must place the limit at seven days.

The guinea-pigs, however, showed spermatozoa up to fourteen days after the operation, but in none of these cases, even when examined shortly after the operation (four days) did the spermatozoa seem to be endowed with motion. On the seventeenth day the same guinea-pig, which at the end of the fourteen days showed an abundant number of spermatozoa, exhibited seventeen days after the operation nothing upon examination but a diminished number of spermatozoa, with evident degenerative changes going on in the epithelial cells and elsewhere, and three days later no spermatozoa at all, so that it would appear as if the guinea-pig was capable of retaining normal spermatozoa for a fortnight after the removal of the testes.

If we come to man we are at once brought face to

[1] "Handbuch der Gerichtlichen Medezin," 1857.

face with this fact: that with the single exception of Princeteau's case we have no data to show how long after castration the human semen contains spermatozoa. That it does do so up to a certain time is shown by Princeteau, but what that limit is it is impossible to say, for he has neglected to give the length of time after castration at which the semen was examined. If, however, we argue by analogy from animal to man, we shall perhaps be justified in saying that if coitus take place within seven days after castration, impregnation of the woman may occur if all the conditions are favorable. But suppose the intercourse take place ten or fourteen days after castration, can the eunuch become a father? is he capable of procreation? To this question in the present state of our knowledge it is impossible to give a definite answer, but the probabilities are that it would be in the negative, although Gould and Pyle[1] state that spermatozoa have been found days and weeks after castration, and the individuals during this period were capable of impregnation. These gentlemen do not give any authorities for this extraordinary statement.

To sum up the conclusions at which I have arrived in studying this question, I should state them as follows:

1. In animals, for a varying period after complete castration, normal spermatozoa are found in the contents of the seminal vesicles.

2. This period varies in different animals, being six days for the dog, seven days for the cat, and fourteen days for the guinea-pig.

3. In man, clinical cases are recorded where fecundation of the female has occurred after coitus with the male who has been completely castrated, but in accepting the correctness of such statements we must remember the adage that accidents may happen in the best-regulated families. Still, Princeteau's case (if correct) proves that spermatozoa do exist for a certain time in the seminal vesicles of a eunuch, and arguing from analogy in what occurs in animals this is quite probable.

4. Still pursuing the analogy, in man, as in the dog and cat, a complete castrate *may* be capable of procreation provided the coitus occur within the first seven days after the castration.

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*For Bad Breath.—*

℞ Tinct. myrrhæ, Tinct. lavandulæ aa . . . . 3 iii
Glycerini pur., Sol. Labarraque aa . . . . 3 iiss
Inf. salviæ . . . . . ℥ viii.
M. Sig. Mouth wash.

[1] "Anomalies and Curiosities of Medicine."

## THE IMMEDIATE AND REMOTE RESULTS OF SEVENTY-ONE ALEXANDER AND SEVENTY-ONE SUSPENSIO-UTERI OPERATIONS.[1]

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The paper here presented is based on 71 Alexander and 71 suspensio-uteri operations performed by the writer during the six years from 1891 to 1897, inclusive, the first Alexander having been done August 7, 1891, and the first suspension August 1, 1893, so that a majority of the Alexanders were performed in the earlier years of this period and a majority of the suspensions in the later years. The facts in this paper are from my private operation-records written by myself on the day of the operation, with very few exceptions, and during the subsequent convalescence and whenever the patient again came under observation. With 3 exceptions, all of the 142 patients were examined by me personally at the time of their discharge, two or three weeks after the operation, and notes made of the existing condition. These notes form the basis of the immediate results here chronicled. For the remote results the patients were examined at least three months after their operations, for the most part by the writer, but in several instances where the patients were at a distance by their attending physicians, who kindly reported the results to me. Sixteen patients it was impossible to trace at all, and 7 were reported as being free from uterine symptoms, or wrote me to that effect. Reliable statistics were obtained from 62 Alexander and 60 suspension cases, 122 out of 142 cases. None of the patients died as a result of the operation. Three, upon whom the Alexander operation was performed, have since died, 2 of pneumonia and the other of unknown causes.

*The Alexander Operation.*—Sixty-four operations. Technic: Locate pubic spine by touch. Incision six centimeters long, nearly parallel with Poupart's ligament, the lower end of the incision being at the pubic spine. Dissection of the subcutaneous fat layers until the glistening fibers of the aponeurosis of the external oblique are brought into view. All the structures in the external abdominal ring are seized with tissue-forceps and drawn up. Here it may be said in passing that the author has never failed to find the ligament. A small hook is passed under all the tissues and is then replaced by the operator's finger. The nerve is separated from the ligament and drawn to one side. Traction is made on the ligament, and after it has been pulled out to its uterine enlargement the same procedure is adopted

[1] Candidate's paper presented for admission to membership in the American Gynecological Society at its Twenty-third Annual Meeting, held at Boston, May 24, 25, and 26, 1898.

with the ligament on the opposite side, the uterus is anteverted by bimanual touch, and the ligaments are anchored to the pillars of the ring by two ligatures of fine silk to each pillar. Silkworm gut, kangaroo tendon, and chromicised catgut were used in some instances, but fine silk as a general rule. If the ligament is much bruised it is cut off, otherwise it is left in the wound. The wounds are closed with interrupted sutures of silkworm gut passing through skin and fat, and catching up a few fibers of the aponeurosis of the external oblique so as to leave no dead space. Some of the wounds were closed with a continuous suture of either catgut or silkworm gut passed subcutaneously. The dressings consist of dry powder, aristol, or sterilized nosophen dusted on the wound, and dry gauze stuck to the skin with corrosive collodion to prevent contamination of the wound from the patient's finger or the subsequent shifting of the dressing.

Seven operations by the Edebohls' method. Slightly longer incision. Inguinal canal laid open by dividing the aponeurosis of the external oblique in the direction of Poupart's ligament up to the internal abdominal ring. Isolation of the round ligament in the canal by means of hooks, and separation of the nerve. Drawing out of the round ligament up to its uterine enlargement and stripping back of the peritoneal investment. After the other ligament has been shortened the position of the fundus uteri is verified by the operator's little finger passed through the internal ring. The edge of the internal oblique muscle is stitched to Poupart's ligament by a continuous suture of chromicised catgut, No. 2, the needle passing through the round ligament with each stitch and thus securely anchoring it. The aponeurosis of the external oblique is closed with the same stitch, which is tied with its other end at the upper limit of the wound in the aponeurosis. By this procedure there is only one knot in the entire operation. The ligament is cut off at the external ring. The wounds are closed and the dressings are applied in the same way as in the other method.

Although the Alexander operation was primarily intended for cases of retroversion without adhesions, its field has been amplified in my hands by performing it in conjunction with posterior colpotomy in cases of moderate adhesions. This was done in nine of my cases with good results. The colpotomy proved especially useful where the uterosacral ligaments were tight. Where the ovaries were prolapsed and free from adhesions the Alexander operation, in certain cases, has restored them to a normal position, but when adherent, or when the ovarian ligaments have been long, it has not done so in a majority of cases even with the aid of colpotomy.

A glance over the tabulated statistics of the 71 Alexander operations, shows that 34 are cases of retroversion free from adhesions, 7 of retroflexion free from adhesions, 28 of retroversion or retroflexion with some adhesions or with tight uterosacral ligaments, and 2 of procidentia. One or both ovaries were noted as being prolapsed in 16 cases. An inguinal hernia existed on one side in two cases, and a radical cure was effected in the course of the Alexander operation in each case. Curetting of the uterine cavity was done in every case. Amputation of the cervix and the ligature operation for hemorrhoids were each done once. Trachelorrhaphy and perineorrhaphy were performed together 7 times, perineorrhaphy alone 6 times, and trachelorrhaphy alone 9 times.

The immediate results of the 71 Alexander operations were good in all but 6, 92 per cent. Of these 6, 1 only was a total failure, the other 5 being classed as fair. The cause of the failure is not plain as the ligaments were of good size, were anchored with silk, and the wounds healed by first intention. One ligament broke off in the course of the operation in five cases. As a result, the uterus was in the first degree of retroversion at the time of the patient's discharge in 3, and later, completely retroverted in all except 1. This patient went through a normal labor one year and five months after the operation, and subsequently the uterus was in good position and well involuted. The first 4 cases, taken together with one case in which there was only one ligament to shorten because of a previous ovariotomy, and in which there was an ultimate failure, would argue against trusting to one ligament to hold the uterus in place. In one or two other cases the ligament broke during the operation and was recovered by opening the entire inguinal canal and fishing for the ligament through the internal ring. In the one Edebohls' operation where the cord gave way at its uterine insertion, the fault was due to using too great force in pulling on a fatty cord in a fleshy patient through an error in not appreciating that the fundus uteri was already well up.

Pregnancy has taken place in 12 cases, 19 per cent., following operation. The pregnancy and labor were both normal in 5 of these. Of the remaining 7, 1 had a tedious labor terminated by forceps, and, following that, three miscarriages. Six years after the operation the uterus was found retroverted. It was noted in this case at the time of her discharge from the hospital after the Alexander operation that from the one-sided position of the uterus one ligament had probably given way. In another there was prolonged suppuration in the wounds and the silkworm-gut ligatures which had anchored the liga-

ments came out. Here the uterus was found retroverted in early pregnancy. Another patient miscarried at seven months from overwork. The uterus was subsequently in good position. Another had pain in the left groin while pregnant, and her labor was slightly tedious. The uterus was in good position afterward. Another is now pregnant in the early months, while still another was eight-months' pregnant when last seen and had had no unusual symptoms. Another had a normal pregnancy, but the labor was long and the placenta was adherent requiring manual extraction, which was followed by sepsis. Five weeks after labor the uterus was found retroverted and adherent, a condition not to be wondered at in the light of the sequelæ of the confinement, but two months afterward it was small and in good position. To sum up: Pregnancy and labor were both normal in five cases; pregnancy was noted as being abnormal in the remaining cases three times; labor abnormal three times; pregnancy normal three times, and labor normal once. Abortion resulted from the operation in no case. The uterus was retroverted following labor in 4 cases.

The tables show that out of 62 cases examined the ultimate results were good in 48, 77 per cent., and failures in 14, 23 per cent. The other 9 cases were classed as unknown. It is to be remembered that of the 14 failures, 6 were immediate partial or complete failures also, leaving 8 cases in which the uterus became retroverted subsequent to the discharge of the patient. Four of these became retroverted, as already stated, after a subsequent labor. It is noticeable also that all of the immediate partial or complete failures were afterward traced and the results appear again in the list of ultimate failures. The large percentage of ultimate failures is to be attributed to lack of skill on the part of the operator, most of the failures being among the earlier cases, and to the fact that the operation was sometimes performed in unsuitable cases.

A left inguinal hernia followed the Alexander operation in two instances. In one the cords were slender and the rings normal in size, while in the other the cords were very large and the rings large. The ligaments were anchored with catgut in both cases. In both the uterus was in good position ultimately. Pain in the scars followed the earlier operations where the nerves were not carefully separated from the cords, but not in the later operations. No bladder symptoms as resulting from the operation have been noted in any of the cases.

*The Suspensio-uteri Operation.*—Technic: For convenience of description the 71 cases may be divided into (1) those in which the uterus was suspended by attaching the fundus uteri to the parietal peritoneum, and (2) those in which suspension was accomplished by sewing the round or ovarian ligaments to the parietal peritoneum.

1. Of this class there were 58 cases, divided into 11 for the posterior face of the fundus, 11 for the top of the fundus, and 36 for the anterior face of the fundus. Permanent ligatures of silk or silkworm gut passing through muscle and fascia as well as peritoneum and constituting ventral fixation, were employed only seven times. Both ovaries and tubes were removed in two of these and one or both ovaries resected in the others. It is interesting to note here that only one of these patients has since become pregnant, and she was reported by her physician as having had pain during early pregnancy, but later to be entirely free from it. This was a case of extensive suppuration following pelvic abscess, where the adhesions between the fundus and the parietes must have been very dense.

The usual method of operating is as follows: Unless there is much work to do in the pelvis in the way of operating on the ovaries and tubes, the incision is short, six centimeters, in the median line, with its lower end not nearer than three centimeters to the symphysis pubis. The uterus is brought up to the abdominal wound by two fingers of the operator's left hand. A slender, full-curved needle with a round point, and threaded with a carrying thread, is passed through the transversalis fascia and peritoneum at a distance of one centimeter from the right edge of the incision, then through a deep bite of the fundus uteri, and finally through the peritoneum and transversalis fascia on the left edge of the incision. The carrying thread is used to draw through a strand of No. 2 or No. 3 chromicised catgut. Two or three stitches are inserted, that through the top of the fundus being quite superficial in the uterine tissue. Care is observed in not interfering with the uterine ends of the tubes and in not attaching the fundus too close to the pubes. Tying the uterine sutures closes the peritoneum except for a short space in the upper part of the wound, which is closed with a continuous stitch of fine catgut. The linea alba is dissected out and the bellies of the recti are approximated by two or three interrupted stitches of No. 2 chromicised catgut, each stitch catching up the underlying peritoneum so as to leave no dead space. The fascia is closed by a continuous suture of the same material and the skin by a subcutaneous right-angled silkworm-gut suture. Dressings of dry powder on the line of the wound and dry sterile gauze stuck to the surrounding skin by corrosive collodion.

2. By the round or ovarian ligaments, 13 cases, 8 of the former and 5 of the latter. The incision into the peritoneal cavity is the same as in suspension of

the fundus. If by the round ligaments, the ligament on one side is pierced at a point three centimeters from the uterus by a round-pointed, full-curved needle carrying fine silk. The needle is then made to pierce the peritoneum and overlying transversalis fascia at a point two centimeters outside of the line of the abdominal incision and five centimeters from the symphysis pubis. Another stitch is placed on this side and two similar stitches on the opposite ligament and all are tied. In cases where the ovarian ligaments are very long, allowing complete prolapse of the ovaries, the same procedure is carried out with the ovarian ligaments as with the round ligaments, two fine silk stitches to each ligament being used. The abdominal wound is closed and dressed as in the other form of suspension.

Glancing over the tables it appears that in 40 cases suspension was done for retroversion, retroflexion, or retroposition accompanied by more or less extensive adhesions; in 19 cases for retroversion, retroflexion, or retroposition without adhesions; in 6 cases for prolapse; and in 6 cases to prevent ovarian prolapse, or, after the removal of severe grades of inflammatory affections of the ovaries and tubes, to prevent retroversion of the uterus into the raw surface left by their removal. Both tubes and ovaries were removed in 13 cases, one ovary in 34 cases, the ovaries and tubes were resected in 17 cases, and nothing was done to the ovaries or tubes in 15 cases. Every effort was made to preserve some healthy ovarian tissue and, considering the severity of many of the cases, the number in which both ovaries and tubes were removed is a small one.

The immediate results were good in every one of the 71 patients except that 5 had mural abscesses. As far as the uterus was concerned it was suspended in good position at the time of the patient's discharge. As regards symptoms, the pain immediately following was inconsiderable in almost all. A few patients complained of a drawing feeling in the uterine region on coughing and sneezing during the first days after being up and about. In no case was there interference with micturition.

Subsequent pregnancy has resulted in 7 cases, or 12 per cent. Of these, 5 women have had normal pregnancies and normal labors, and one of them is now five-months' pregnant for the second time, and is not having pain. The remaining 2 of the 7 are now pregnant. One, four months along, is having no special symptoms to mark this pregnancy from her former ones; the other, six months along, has already been referred to as having had pains but as now free from them.

In the 5 cases in which normal pregnancy and labor has taken place the uterus was found in good position two months after labor in one, a case of suspension by the anterior face of the fundus, and in another, a case of suspension by the round ligaments, the uterus was found retroverted two years later. One of the remaining three is now pregnant again, and of the other two it has been impossible to obtain the facts because the patients live at a distance.

When we take into account the fact that a majority of the suspension operations have been done during the past year and a half, it is not surprising that fewer of these women have become pregnant than has been the case with those upon whom the Alexander operation was performed, to say nothing of the suspension operation having been accompanied by the removal of one or both ovaries in 66 per cent. of the cases as against the Alexander, in which, with one exception, the ovaries and tubes were not operated upon.

Of the 60 patients examined as to ultimate results, the results were good in 56 and bad in 4. Four of the 12 patients counted as unknown, wrote that they were relieved of their symptoms. Not including these we have 93 per cent. of good results and 7 per cent. of failures. Only one of the failures followed pregnancy, and that one was a case of suspension by means of the round ligaments. In another, also a suspension by means of the round ligaments, the ligaments gave way ultimately. The other two suspensions were by the anterior and top of the fundus. In one there was suppuration in the wound, while in the other, the union was by first intention, but there was a question as to the patient having had an abortion not long after the operation. There was a small hernia in the cicatrix in one case two years after the operation. There had been suppuration in this wound while the patient was in the hospital. In no case were there symptoms pointing to strangulation of a loop or loops of intestine due to the suspending ligaments or bands.

In contrasting the Alexander with the suspension operation as to immediate and remote results one is impressed at the outset with the fallacy of statistics. Knowing as we do that many of the Alexander operations have been performed on patients upon whom, in the light of a larger experience, we should elect to do the suspension operation, and also that the Alexander operations on my list having been begun so much before the suspensions that there has been with the former a longer period of time in which to allow of pregnancy to occur and of late results to be gathered, we are prepared to have the Alexander operations make a poorer showing. The immediate results of the Alexander operations were 92 per cent. good, as against 100 per cent. good for the suspen-

sions. The remote results of the Alexander operations were 77 per cent. good, as against 93 per cent. good for the suspensions. Hernia followed the Alexander operation in 3 per cent., and the suspensio uteri in 1.7 per cent. Twenty-five per cent. of the subjects upon whom the Alexander operation was done who became pregnant had tedious labors. No tedious labors after the suspensio-uteri operation have been noted. One of each class of patients had excessive pains during the early months of a subsequent pregnancy. One-third of the Alexander subjects had the uterus retroverted after labor. In the suspension cases the statistics as to this fact are defective. Only one patient was known to have had retroversion following labor.

Pains in the scars have been noted after certain of the earlier Alexander operations, and rarely these pains have persisted a considerable length of time. These may be contrasted with the drawing sensation noted after some of the suspension operations, but the drawing sensation has never been of more than temporary duration. After neither operation was there interference with micturition, and neither operation was the cause of abortion or miscarriage.

General conclusions: (1) The Alexander operation is preferable to the suspensio-uteri operation because it seeks to support the uterus by its natural ligaments. (2) The Alexander operation is indicated in retroversion, retroflexion, and retroposition without ovarian disease. (3) In retroposition with tight uterosacral ligaments posterior colpotomy for the purpose of dividing the tight ligaments may be performed with advantage, together with the Alexander operation. (4) In ovarian prolapse, especially if the ovarian ligaments are long, the Alexander operation cannot be depended on to raise the ovaries into a normal position. (5) One round ligament is not sufficent to maintain the uterus in place. (6) The Edebohls' operation, although requiring a longer time for its performance than the operation at the external ring, is the preferable operation because by it the round ligament, being uncovered in the entire length of the inguinal canal is less liable to be broken; also, because this method does away with the need of anteverting the uterus bimanually in the course of the operation; and finally, because of the secure manner in which the ligament is anchored and the inguinal canal closed, making subsequent hernia impossible. (7) Although the Alexander operation leaves two scars on the abdomen, they are so situated as to be covered by the pubic hair and are subsequently less of a disfigurement than is one scar in the median line. (8) The suspensio-uteri operation is indicated in retroversion, retroflexion, and retroposition with ovarian or tubal disease, whether inflammatory affections or prolapse. (9) The best method of performing the suspension is by means of absorbable ligatures passed through the anterior and upper portions of the fundus uteri and through the parietal peritoneum and transversalis fascia only. Thus an elastic band is created between the parietes and the uterus which maintains the uterus in place and does not cause interference with the enlargement of the anterior fundus during subsequent pregnancy. (10) Suspensio uteri leaves but one weak spot in the abdominal parietes predisposing to hernia, instead of two, as in the Alexander operation. (11) In the great majority of cases, neither operation is the cause of complications in subsequent pregnancy. Whatever complications do occur are not of a serious nature. (12) In all cases of doubtful diagnosis in which the condition of the ovaries and tubes cannot be determined accurately the suspensio-uteri operation is to be preferred to the Alexander operation.

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## YELLOW FEVER AND THE ABUSES OF QUARANTINE IN THE SOUTH DURING THE EPIDEMIC OF 1897.

By DILLON J. SPOTSWOOD, M.D.,
of Mobile, Ala.

Thus great Achilles who had shown his zeal
In healing wounds, died of a wounded heel.
—O. W. Holmes.

On the 13th day of September, 1897, the first case of yellow fever in Mobile was officially reported to the local board of health by Dr. Edwin L. Marechal. Though an epidemic of suspicious fever had been prevailing in Ocean Springs, Miss. (distant about 50 miles from Mobile and 80 from New Orleans), since July, 1897, and which had on two occasions been investigated by "experts" from Louisiana, Alabama, and Mississippi, not until September was it recognized as yellow fever. During all of this time constant communication had been kept up between Ocean Springs, Montgomery, Mobile, New Orleans, and other towns of importance in the Gulf region.

On the 14th day of August, 1897, Dr. J. M. Holloway of Louisville, Ky., reported to the Louisiana and Mississippi boards of health that he had treated a *well-marked* case of yellow fever in the person of a man recently arrived from New Orleans. Yet the prevalence of yellow fever in New Orleans was not officially known until September, 1897. Though there had been a great deal of fever prevailing in Mobile and some cases of a suspicious nature as early as July 26th, not until September was a single case reported as at all doubtful.

Is it not pertinent, under the circumstances, to ask which of the many State and local boards of

health was responsible for the almost criminal negligence of allowing an infectious disease to be spread broadcast through the country? The reign of terror under the régime of the "shotgun quarantine" and the numerous town, city, and county boards of health has been already too vividly described by the press despatches and correspondents of our daily papers to require more than brief mention. There were two occurrences, however, that were so lawless, unnecessary, and brutal in their nature that one shudders to think that selfish fear could make such unfeeling, canting cowards out of human beings. The writer details them as of special interest. On Septemper 5, 1897, eight days before a case of yellow fever was reported in this city, Mrs. D., an old lady, left here to visit her son in Selma. Her stay there was uneventful until September 14th, when she was informed by the authorities that she must leave the town and go to the "detention camp" some miles distant and remain for twenty days before returning to the city. She protested that she had violated no quarantine law as she had left Mobile eight days before yellow fever had been reported. In spite of her protests and her son's influence she was dragged from her comfortable home, placed in a leaky country log-cabin, not good enough for pigs to occupy, and fed upon food of which a decent cornfield negro would have complained. To cap the climax, the food was served on tin plates without knives or forks. She begged them to allow her to return to Mobile and face the danger of infection, or to go anywhere rather than die of hunger and neglect. But all to no avail. She was compelled to remain for twenty days, contracting rheumatism, from which she has not yet recovered. And all of this was done by order of the "*august*" Dallas County Board of Health, composed of medical men (?). Shortly after yellow fever had been reported a train-load of refugees was passing through Montgomery, en route to Atlanta. Before reaching Montgomery, every window and door had been shut by order of the "health" authorities. A gentleman who had been almost overcome with the heat and dust had the courage to open a window—immediately a gun was pointed at his head and he was informed unless that window was closed at once he would receive the contents of the gun.

Are there recorded in Spanish history any acts more brutal than those perpetrated by "shotgun quarantines"? A condition of affairs little better than anarchy existed for more than two months in the Gulf States. Federal, State, county, and municipal health authorities were in constant conflict.

To show the utter disregard in which the State board of health and State health-officer were held by county boards: The health-officer of Alabama issued an address to all the county boards of the State, instructing them to recognize health-certificates of the U. S. Marine Hospital Service after the holders had been subjected to ten-days' detention in the Government camp. Without an exception they refused to follow the instructions of the health-officer, the majority making twenty days the limit of detention. Not only did the county boards treat with contempt the State health-officer's instructions, but they actually restricted his movements. He attempted upon one occasion to go from Montgomery to Mobile and was informed by the Montgomery board that if he visited Mobile he would be quarantined and not allowed to return for twenty days. Nor was the condition of affairs in towns and cities any better. A "rigid" house quarantine was established by the Mobile Board of Health, which consisted of one guard stationed at the *front gate* of the infected house, the back gate and side entrances being unguarded and free to exit and entrance. Much to the disgust of the olfactories, and little to the discomfort of microbes, crude carbolic acid was freely sprinkled in the streets, while backyards and alleys were neglected. But the most absurd performance was the senseless quarantine that was kept up during the entire epidemic against other infected cities, while every portion of this city was infected.

The maintenance of the house and other quarantine cost thousands of dollars that might have been spent in improving the wretched sanitary condition of the city.

Some quarantine regulations were really amusing: A barrel of carbolic acid that was shipped to Selma had to be thoroughly fumigated before it was allowed to be landed in that town. A large load of rocks from a hundred miles up the Tombigbee River that passed down the river (by the city) had to be "disinfected" before it was unloaded at Fort Morgan, where the material was to be used in building harbor defenses. No doubt the health authorities had detected numerous "yellow microbes" upon the wharves, anxiously awaiting the approach of the barge, to pound upon the unsuspecting rocks. So absurd were the quarantine regulations imposed by the Selma health authorities and the intervening counties that the officers of the Mobile and Birmingham Railroad had to discontinue all trains over their road until quarantine was raised. Is it any wonder then that the quarantine has a much greater terror for all sensible people than the dreaded yellow fever itself? Is it any wonder that all classes of business men cry aloud to the government to save them from the local quarantine fiend and establish a national

quarantine, based upon reason, justice, and humanity; quarantine regulations that may be enforced without paralyzing business and stifling commerce? Would it not be a wise step for the people of the South since the war with Spain has ended to discuss some plan to repel an invader more fatal to human life and the prosperity of the country than a hostile host of armed men? Should not a foreign disease be treated as a foreign enemy and the entire strength of the nation be centered in the federal government to deal a death-blow to pestilence; to establish system and order, where chaos and confusion now reign supreme, among local quarantines? In the name of humanity, of decency, of common sense and reason, let the medical profession implore the people of the South to change their present system of criminal quarantine regulations that has been such a reproach to our honored profession.

Having in the first part of this article given a general idea of the outrages perpetrated upon the people of the South in the name of quarantine, the last part will be occupied in giving the symptoms and treatment of a few cases of the disease.

It is interesting to know that the death-rate in yellow fever in private practice is less than ten per cent.; yet upon the advent of yellow fever in the early fall out people rush at a breakneck speed to localities where scarlet fever, smallpox, diphtheria and typhoid are indigenous, any one of which has a higher death-rate than yellow fever. When seen in time and properly treated yellow fever is to be far less dreaded than typhoid with all of its complications and dreaded accidents that may occur at any hour.

The greatest difficulty in the management of yellow fever is the diagnosis. As the veteran Creole physician, Faget, of New Orleans has tersely remarked: "Is the diagnosis of yellow fever well established? It is not."

From severe attacks of remittent and dengue it is exceedingly difficult to differentiate. It is entirely out of the question to be at all dogmatic in the diagnosis of yellow fever. The following prominent symptoms which are by no means pathognomonic may be noted in well-marked cases: Want of correlation in pulse and temperature; slow pulse and high temperature. Besotted or bloated appearance of the face and eyes as if the patient were just recovering from a debauch. A full and uneasy sensation about the stomach, with tenderness upon palpation. Intense pain in head, back and limbs. Neuralgia of eyelids that may persist throughout the attack. About the third or fourth day albumin may appear in the urine, but it is absent in a great many cases. There may occur suppression of urine, also, about the fourth or fifth day, which may be considered among the most dangerous symptoms. Jaundice sometimes appears as early as the third day, but is oftener postponed until the later stages. It may be general or circumscribed, the icteroid hue being confined to the conjunctivæ, forehead, and cervical region. Late in the attack the pulse may become very rapid and weak, the patient sinking rapidly. Hemorrhages sometimes occur from the nose, lips, gums, and bowels. Fissured lips, with a serosaguinous discharge and the formation of dark-looking scabs, are common in severe cases.

The febrile paroxysm is by no means limited to seventy-two hours, as is dogmatically insisted upon by some authorities. The fever in many cases lasts for six, seven, and sometimes ten days in the severer cases. During the stage of calm, which is marked by a defervescence in temperature and a decline of the more acute symptoms, the patient often expresses himself as feeling much better. This is the most critical part of the disease, the time of occurrence of the dreaded black vomit and suppression of urine. The inexperienced physician might be inclined to believe that the crisis had passed, but really this period of the disease is attended by more danger than any other.

Is it possible to make a diagnosis of yellow fever under three or four days? It is not. At least three of the prominent symptoms should be present, together with a history of exposure to infection. From fatty infiltration of the heart the general circulation is impaired, hence if a vascular portion of the body, as the face, forehead, or neck be pressed upon with the finger, a white spot is made, and upon the removal of the finger the circulation is much longer in returning to the anemic area than in other cases. The sluggish circulation accounts for the dusky, livid color of the face and injected conjunctivæ.

I have now described briefly the most prominent symptoms of yellow fever, yet any physician who has had anything like an extended experience in the treatment of fevers will tell you he has seen the identical symptoms in both remittent and dengue. Fortunately for science and the reputation of the physician, death almost invariably occurs among the first two or three cases in the beginning of an epidemic, and an autopsy removes all doubt. It must be very evident to the practitioner, even of limited experience, that in a self-limiting disease, whose etiology is a specific poison not yet definitely known, the only treatment to be thought of is to combat the symptoms as they appear. No routine is possible in contending with this fever. However, there are certain rules that must be adhered to; these more properly come under the direction of the nurse: (1) Keep your patient in the recumbent position during the

entire attack. Never allow him to get up to void urine or move the bowels. Always use the bedpan for this purpose. (2) Have the room thoroughly ventilated, but avoid drafts on the patient. (3) Keep him quiet, allowing no one in the room except the attendants and near relatives. (4) Use only the covering that is comfortable for the patient. No good and much harm is derived from profuse sweating under blankets. (5) Never crowd the stomach with fluids. Use crushed ice and cold drinks in small quantities often repeated. (6) If possible, keep the patient in ignorance as to the nature of his disease. People have been known to die of fright when told they had yellow fever.

According to Sternberg the secretions in the alimentary canal become very acid during an attack of yellow fever. To neutralize this condition he has recommended the following:

℞ Hydrarg. bichlorid. . . . . gr. ⅓
Sodii bicarb. . . . . ʒiv
Aquæ . . . . . Oij.
M. Sig. Two tablespoonfuls, ice-cold, every two hours.

I have substituted the following with excellent results:

℞ Sodii bicarb. . . . . ʒiv
Aqua menth. pip. . . . . Oij.
M. Sig. Two tablespoonfuls every two or three hours, ice-cold or with crushed ice.
℞ Sodii sulphocarbolatis . . . ʒij.
Ft. pulv. No. 8. Sig. One powder every three hours with soda solution.

The sulphocarbolate of sodium very often quiets the stomach where the bichlorid causes nausea and vomiting, besides the antiseptic effect is equally as efficient as the mercuric salt. For hyperpyrexia there is no better antipyretic than ammonol, gr. vj to gr. viij, with a tablespoonful of whisky or a teaspoonful of aromatic spirits of ammonia every two hours until the fever falls below 102.5° F. I have not in a single case noticed any depression, cold sweating, or cyanosis from the use of this remedy, as often occurs with the use of the other coal-tar products.

At the outset of an attack, if a purgative is required (which occurs ninety-nine times out of a hundred), the following should be prescribed:

℞ Hydrarg. chlor. mitis . . . . gr. vj
Sodii bicarb. . . . . gr. vj
Aq. menth. pip. . . . . *m.* ss
Sacchar. lac. . . . . gr. x.
Ft. pulv. No. 2. Sig. One powder at once, repeat and in six hours if bowels have not moved.

A tablespoonful of good brandy or whisky in a wineglassful of crushed ice should be given every three or four hours. As the stomach for the first five or six days of the attack is not capable of digesting any kind of food none should be given; the alcohol must be depended upon to supply the required nourishment. If conditions make it necessary, liquid food by the rectum may be resorted to. It is of the utmost importance that nothing be given that in the least deranges the stomach, for there can be no doubt that black vomit is due to the constant irritation of the stomach by foods and medicine. It were better that *all* medicine be discontinued than for the patient to have an irritable stomach and have him exposed to the danger of black vomit. Where there is great depression and an unusually slow pulse, strychnin sulphate, $\frac{1}{40}$ of a grain, and nitroglycerin, $\frac{1}{100}$ of a grain, should be given every three hours, and the dose of alcohol increased. In one of my cases the pulse ran as low as 39 to the minute, when strychnin and nitroglycerin were given every two hours for two days with good results.

For suppression of urine good results have been obtained from calomel in ½-grain doses every hour or two. Hot applications and counterirritation over the kidneys have given favorable results. The fatty infiltration of the heart and other important organs requires that the convalescence of this fever be handled very cautiously. The diet should be most guarded and the return to normal feeding must be accomplished in the most careful and gradual manner. Many a life has been sacrificed to a whim of the palate. Out of some two hundred cases of fever treated by me last fall thirty were yellow fever, and it is not without a feeling of pride that I can truthfully state that I lost not a single patient. The clinical histories of three typical cases are herewith appended.

CASE I.—W. C., male, aged twenty-four years; American, native of Mobile, Ala. Temperature ranged from 104° F. on the first day of the disease to 98½° F. on the tenth day; pulse ranged from 114 to 50 during the same period. For five days after the tenth day the pulse ranged from 40 to 50 with normal temperature and great prostration. Albumin appeared in the urine on the third day. Terminated in recovery.

CASE II.—G. K. C., male, aged thirty-five years; American, native of Monroe County, Ala. Temperature first to tenth day ranged from 104° F. to normal; pulse from 84 to 58. On the tenth, eleventh, twelfth, and thirteenth days the pulse went as low as 39 and was almost imperceptible at the wrist. Recovery.

CASE III.—Jno. R., male, aged twenty years; American, native of Mobile, Ala. Temperature ranged first to tenth day 102°F. to normal; pulse, 88 to 80. There was intense neuralgia of the eyelids and hemorrhages from the gums, lips, nose, and bowels. Recovery.

In the long list of details, which, of course, are too numerous for all to come within the scope of this

article, the writer has forgotten to mention the management of nausea and vomiting. A great many remedies that have been used in ordinary cases of sick stomach may be resorted to. I have found cocain hydrochlorate in ¼-grain tablets dropped on the tongue and swallowed rapidly will relieve the most intense nausea. Given in solution it is absorbed by the mucous membranes before reaching the stomach. A small ice-bag or an ice-cold towel placed low down on the throat and the face sponged with cologne-water will greatly assist the cocain. Three grains of bismuth subnitrate and $\frac{1}{10}$ of a grain of calomel given with 5 grains of sugar of milk and $\frac{1}{10}$ of a drop of oil of peppermint every hour or two will sometimes relieve the patient. The old remedy of burning the epigastrium thoroughly with a mustard plaster should never be neglected. Finally, when all have failed, morphin and atropin, hypodermically, may be cautiously used. The phosphate of codein should be tried first.

## THE EFFICIENCY OF GLYCERINATED VACCINE VIRUS AS USED BY THE VACCINATING CORPS OF THE NEW YORK HEALTH DEPARTMENT IN PRIMARY VACCINATIONS.[1]

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THE following report is presented upon the efficiency of the glycerinated vaccine virus produced by the Vaccine Laboratory, and used by the Vaccinating Corps of the Division of Contagious Diseases of the New York Health Department during the thirteen months ending December 1, 1897. The report is based on the number of *primary* vaccinations performed and inspected, as shown by primary lists furnished by the vaccinators. All cases have been disregarded in which for any reason the results of the vaccinations were not learned. The number of vaccinations performed and inspected during November and December, 1896, was 1062. During 1897 almost all of the work was done during the months of April, May, June, September, October, and November, and the number of vaccinations inspected was 19,742, making a total for the eight months of 20,804. Of these, 20,420 were successful and 384 failed, the percentage of successes being 98.106. Some of the vaccinators failed to indicate upon their lists the laboratory numbers of the different lots of virus which they used, so that it has been impossible to classify all the vaccinations according to the virus employed, but a special effort has been made to trace the failures back to the virus used, and this has been successful in most instances. The accompanying list shows the source of the virus in the unsuccessful cases:

| Animal No. | No of Failures. | Remarks. |
|---|---|---|
| 173 | 1 | |
| 177 | 2 | |
| 195 | 9 | |
| 197 | 1 | |
| 199 | 171 | |
| 202 | 8 | 1 patient 10 years old.<br>1 " 8 " " |
| 203 | 17 | 1 " 13 " " |
| 206 | 25 | 1 " 35 " "<br>1 " 41 " "<br>1 " 47 " "<br>1 " 36 " "<br>1 " 23 " "<br>1 " 12 " "<br>1 " 19 " " |
| 209 | 8 | |
| 215 | 1 | |
| 216 | 70 | 1 " 24 " "<br>1 " 30 " " |
| 217 | 1 | |
| 218 | 3 | |
| 220 | 11 | 1 " 12 " " |
| 221 | 14 | |
| 222 | 2 | |
| 228 | 3 | |
| 232 | 1 | |
| 236 | 2 | |
| 239 | 5 | |
| 241 | 4 | |
| 243 | 1 | |
| 245 | 3 | |
| 246 | 3 | 1 " 13 " "<br>1 " 8 " " |
| 247 | 2 | |
| 282 | 1 | |
| 286 | 1 | |
| 288 | 4 | |
| 289 | 1 | |
| 296 | 1 | |
| Unknown | 8 | 1 " 10 " "<br>1 " 24 " " |
| Total. | 384 | |

From this list it appears that the virus from two particular animals, calves 199 and 216, was responsible for a very large proportion of the failures. From calf number 199 the number of vaccinations inspected was 428, of which 257 were successful and 171 failed, the percentage of successes being 60. From calf number 216 the number inspected was 242, of which 172 were successful and 70 failed, the percentage of successes being 71. Of the 384 failures, then, calf number 199 and calf number 216 are responsible for 241, or 63 per cent., leaving 141 failures, or 37 per cent., distributed among 28 other lots. Excluding the cases vaccinated with the two lots of particularly poor virus, we find in 20,134 cases, 19,991 successes and 143 failures, the percentage of successes being 99.29.

An examination of all the reported failures with reference to the ages of the persons vaccinated, shows that 15 cases, though classed as "primaries," were so old that it is more than likely that they were revaccinations. Excluding these, we have 20,119

[1] From the Vaccine Laboratory of the New York Health Department.

cases, 19,991 successful, and 128 failures, the percentage of successes being 99,363.

The virus issued by the vaccine laboratory usually retains its activity for at least six months, and it is not easy to explain why lot 199 deteriorated so quickly. The following facts may be stated:—Calf, number 199. (1) The vaccination "took" well on the animal. (2) The pulp collected was ground up with chemically pure glycerin in the proportion of 4 c.c. of glycerin to 1 gram of pulp. (3) The virus on original clinical test, and in first retest "took" well, but it showed signs of deterioration only two months after collection (a few days after the virus was issued to the vaccinators). It might at first be supposed that too much glycerin was added, for most of the virus issued has been made up in the proportion of 2 or 3 c.c. of glycerin to 1 gram of pulp, but we are obliged to abandon this view when we find that all the lots from 191 to 202 were diluted 4 to 1, and that while calf 199 was responsible for 171 failures, only 18 failures are charged against the eleven other lots.

In connection with calf number 216, the following facts may be stated, but it must be admitted that they hardly furnish a satisfactory explanation of the failures charged against the virus: (1) The vaccination "took" fairly well, though not ideally, upon the animal. At the time of collection the vesicles were somewhat flattened instead of being well elevated. (2) The virus was made up with 3 c.c. of chemically pure glycerin to 1 gram of pulp. (3) On the original test the virus gave evidence that its quality was somewhat below the very high standard reached by most of our virus. This test consisted in 5 primary cases, each vaccinated in 3 spots. The result, instead of being 15 "good" vesicles, was 15 vesicles of which two were "good," 11 were "fair," and 2 were "small." Two weeks later a retest of 1 case, vaccinated in 3 spots, gave 3 vesicles, 2 fairly good, and 1 fair, though rather small. Further retests were as follows: at 1 month after collection 1 case gave 3 "good" vesicles; at 2 months, 1 case gave 3 "good" quality, fair-sized vesicles; at 3 months, 1 case gave 3 "good" vesicles; at 4½ months, 1 case gave 3 good quality but small vesicles; at 5 months, 1 case failed in all of the 3 spots of insertion; at 6½ months, 1 case gave 3 good vesicles again.

It will thus be seen that although the virus from calf 216 was not originally as ideally good as most of the virus issued by the vaccine laboratory, yet, in the hands of the clinical tester, it continued for more than 4 months to "take" in every spot in which it was inserted. This, of course, carried it beyond the date of its issue to the vaccinators.

SUMMARY OF RESULTS—PRIMARY VACCINATIONS.

| Nov. 1, 1896 to Dec. 1, 1897. | Successful. | Failed. | Total. | Per cent. Success. |
|---|---|---|---|---|
| All cases included..... | 20,420 | 384 | 20,804 | 98.106 |
| Two lots of poor virus excluded (c. 199 and c. 216.. | 19,991 | 143 | 20,134 | 99.29 |
| Fifteen probable revaccinations excluded..... | 19,991 | 128 | 20,119 | 99.363 |

## ADDRESS.

### *THE CORNELL UNIVERSITY MEDICAL COLLEGE.*[1]

BY J. G. SCHURMAN, A.M., D.Sc., LL.D.,
PRESIDENT OF CORNELL UNIVERSITY.

THE origin of the Cornell University Medical College reminds one of the birth of Minerva. That goddess, you remember, sprang full-armed from the brain of Jove. Our medical college is almost as miraculous a creation. A year ago no one dreamt of its existence. To-day it stands before the world with an actual organization and a potency of achievement which presage its manifest destiny as the America acropolis of Æsculapius.

I know no better illustration of Professor Huxley's saying that "the question of medical education is, in a very large and broad sense, a question of finance." Most assuredly this institution could not have come into existence but for the unlimited capital which a wise head and generous hand have furnished for its foundation and support. That munificent gift is the offering to humanity of one who feels deep sympathy with his suffering fellowmen and who believes that their lot is to be ameliorated by the elevation of medical education. "I suppose," this generous benefactor once said to me, "we all want to do some good in the world, and I should like to do something by improving the education of that profession which cares for the lives of men, heals their wounds, and alleviates their sufferings." Of such a compassionate heart and intelligent understanding was the Cornell University Medical College born. By the star of our nativity, therefore, we are dedicated to noble things. With such a consecration, which will prove a never-failing inspiration, let us, in that spirit of fraternal union which gives irresistible strength, strive by zeal, diligence, and wisdom for the fulfilment of the high trust committed to us. Here and now let us resolve that, so far as in us lies, the humane and lofty purpose of our founder shall be accomplished.

I have no doubt whatever that we shall succeed in our task. If our hopes are sanguine, if our am-

[1] Delivered at the opening exercises of Cornell University Medical College at New York, October 4, 1898.

bitions are high, if we presume to make our aim a goal yet unattained, do we not also set out on our career under circumstances more favorable than have ever smiled upon any similar institution since medical education began with the University of Salerno? Much may be expected of this medical college for much has been given to it. I speak not only of capital, which, however, is forthcoming for every reasonable object. Nor have I in mind material structures, though our local habitation in spacious proportions will soon rise, like a thing of splendor and beauty, to crown this section of our great metropolis. My thought is rather of *men*. For it is true now as always that, though money be the indispensable condition, the real and essential cause of the success of any institution is to be found in the *men* who are its active soul. If, therefore, my expectations are pitched high for this medical college, it is primarily because it is organized with a remarkably strong, though still incomplete, staff of instruction—a body of picked men, a corps of physicians and surgeons whose practice puts them in the van of their profession, and whose gifts as teachers, already exhibited in other schools, have won for them the united admiration of rival bodies of students. Personally I count it a peculiar privilege that I am to have the honor of association with these distinguished gentlemen in the elevation of medical education and the advancement of medical science in this great city of New York. I regret that I am not better qualified to aid them. I am not a physician or the son of a physician. And yet, to be quite frank with you, I wish I had some qualification that might commend me to the confidence of this portion of the medical public. But I have neither rags nor tatters to hide my utter nudity. Perhaps, however, your sympathetic imaginations will invest me with at least the semblance of a decent robe if I tell you that my *Alma Mater* has on her rolls, not only the name of Huxley, but those eminent medical practitioners and reformers, Sir Henry Thompson, Sir William Jenner, Henry Maudsley, Sir Morrell MacKenzie, and, greatest name of all and of the century, Sir Joseph Lister. And you may be kind enough to think that a college which turns out such men is not likely to breed in any of its sons indifference to, or lack of sympathy with, the science and art of medicine.

The work and fame of this medical college, then, are in the hands of its faculty. You will agree with me that they are in safe keeping there. But I should not have done justice to my own feelings, or fully described the support of this institution, if I did not mention another feature of its existence, a feature which I may be pardoned for thinking of cardinal importance, as it explains and justifies—especially as nothing I have to say would else justify—the prominence which has been given to my unworthy self in these proceedings. This medical College is a department of Cornell University. And by that description I mean to say that it is a real, integral, and vital part of the university. In other words, the legal corporation, known as Cornell University, has exactly the same rights, powers, responsibilities, and jurisdiction in regard to this new department as it has hitherto exercised in regard to every other department of the university. The only difference is that a wealthy philanthropist gives us an endowment for the conduct of the department of medicine while many of our other departments are unendowed and must take their chances of support out of the general funds of the university. This difference is momentous indeed from the point of view of permanent and assured vitality and efficiency. But considering the mere fact of organization I repeat that the Medical College stands on precisely the same footing as the Academic Department, the College of Law, or the Sibley College of Mechanical Engineering. The faculty in every case is charged with the educational administration of its respective college, but all business is conducted and all appointments are made by the Board of Trustees of Cornell University. The members of the Faculty of Medicine receive fixed stipends like the professors in other departments; and as they have nothing to do with the business affairs of the college, so they have no interest in the fees received for tuition, which are turned into the treasury of Cornell University. The faculty, in a word, is an educational body.

You may ask if it is possible for the Board of Trustees of Cornell University, meeting in Ithaca, to manage wisely the affairs of their medical college in New York? Let me remind you, by way of answer, that this is an age of telegraphs, telephones, and rapid travel. But not only this. Following a precedent already established in connection with some of the other colleges of the university, the Board of Trustees have established for the Medical College an advisory council, consisting of the dean and two members of the Faculty of Medicine, three trustees (who are residents of New York), and the president of the university as chairman, whose duty it is to digest all business affecting the medical college and make recommendations thereupon to the board for formal action. This system, which insures a thorough consideration of every question from every point of view, promises the happiest results. The council meets once a month, on the day following the monthly meetings of the faculty.

So much of the anatomy and physiology of the Medical College as one of the organs of Cornell Uni-

versity. Let me now turn to the inner and ideal side of this relationship.

Though the physical distance between the Medical College and the other departments of Cornell University is greater than it is in the case of Harvard or Columbia, I believe I am not mistaken in the belief that the connection is really closer. For the men of the first and second years are free to study either here or in the Academic Department at Ithaca, while in the case of the women they are even required to go to Ithaca. It is a characteristic of Cornell University, whose charter consecrates it to both "liberal and practical education," not to draw sharp lines of demarcation between the academic department and the professional schools. It has always been recognized that when the curriculum of the classical colleges was enlarged so as to provide for the sciences of Nature and the modern humanities—as from the beginning it was enlarged at Cornell—then the Academic Department, instead of withdrawing to the seclusion of an imaginary superiority, in fact became the foundation and the fruitful ally of every technical, scientific, or learned profession. Nearly half the work of our engineering courses is given in the Academic Department. And we were glad to make a similar arrangement for the medical student. While on this subject of inter-relationship I may add that the graduates of every one of our professional colleges enjoy equally with the Bachelors of Arts the privilege of voting for alumni trustees. I suppose we may soon expect to see an influx of medical members into our board!

There is another feature of Cornell University which is of no little importance in the consideration of medical studies. From the beginning we have given prominence to the natural sciences. Of course the physico-chemical sciences were indispensable to the success of our engineering departments. But though we had no medical school, which imperatively called for the biological sciences, these were nourished with equal care and assiduity. I need only mention the name of Professor Wilder as a guarantee of the quality of the work done. But not only were physiology, anatomy, and the kindred sciences cultivated by the university; their indispensable importance to the physician and surgeon was recognized at a time when students at medical schools were accustomed to hear "lectures upon surgery without any knowledge of anatomy and upon therapeutics while ignorant of physiology" (Dr. Wilder in *Boston Medical and Surgical Journal*, June 24, 1875). Indeed, within two years after its opening in 1868, Cornell University had arranged a four-years' course in natural history leading to the degree of Bachelor of Science, which was well adapted to the needs of students who contemplated the study of medicine; and in 1878 for such students as could not take this full course, a shorter two-years' course was provided, in which a large amount of time was devoted to practical work in anatomy, physiology, histology, and chemistry. Any one who knows how these sciences were in those days neglected in the medical schools will perhaps feel that there is a certain propriety or poetic justice in the endowment which Cornell has at last received for the establishment of a great medical department.

This is the attitude of Cornell University to the sciences of Nature; this is what she has done for the scientific preparation of students for work in the medical schools. Is not her spirit and aim wonderfully congenial with the spirit and aim of a modern medical school? What is needed for the training of physicians and surgeons to-day? I answer, first, science; secondly, science; thirdly, science. If two or three generations ago medicine was, on the side of theory, pretty much where Harvey had left it in the Seventeenth Century and, on the side of practice, scarcely in advance of that of Celsus or Galen, the last half century has wrought an entire change. As Sir Joseph Lister recently said, in his presidential address before the British Association for the Advancement of Science, "the practice of medicine in every department is becoming more and more based on science as distinguished from empiricism." Recall only the discovery of the functions of the spinal cord, of reflex action, of anesthetics, of the antiseptic method, of the germ theory of disease; think only how the prolongation of life and the lowering of the death-rate (in the City of New York from 32.2 to 19.5 in forty years) has been effected by scientific hygiene; enumerate only such instruments as the stethoscope, the ophthalmoscope, the laryngoscope, the pleximeter, the cardigraph, the spirometer, and the sphygmograph; consider the significance of these essential facts of the healing art of to-day and you will agree with me that modern medicine has been "scientificized." Now I do not claim that Cornell University has in any special way contributed to this transformation of empirical into scientific medicine. But I do assert that from the day of her origin she has observed the change, welcomed it, and endeavored to give her students the training necessary for the understanding of and participation in it. And so to-day she says to every one of these students, master your sciences or you never can be a physician or surgeon worthy the name. As Huxley once put it in an address to the students of my *Alma Mater:* "I do not believe that all the talking about, and thinking of, medical education will do the slightest good until the fact is

clearly recognized that men must be thoroughly grounded in the theoretical branches of their profession." And these branches Huxley reduces to physics applied to physiology, chemistry applied to physiology, physiology and anatomy.

Some of you will say that it is impossible to master the scientific bases of medicine in the one or two years—at most two years—which the medical schools assign to those subjects. This is my belief, too. And so I say, take more time. But not only for mastery of your sciences. A man educated merely in the sciences of Nature, a man whose mind has not been opened, elevated, and enlarged by art, letters, and philosophy is a good deal of a Philistine. Liberal culture, like virtue, or religion, has its own intrinsic value. I shall not, however, stop to argue a thesis so manifest and so universally accepted. But I do desire to ask you if it is not true that a liberally educated man—a man whose powers and faculties have been disciplined, chastened, strengthened, and enlarged by letters, philosophy, and science—will not have a great advantage over the man of mere professional education even in the practice of his profession. He will have deeper insight, a greater comprehensiveness and versatility of intellect, a surer faculty of seeing things as they are and disentangling what is irrelevant and sophistical. This is what gives such profound truth to the saying of Jowett—the greatest educator of his generation—that to be a good engineer a man must be more than an engineer. And I find this same sentiment among the most distinguished physicians. You will find it expressed in Sir Morrell MacKenzie's essay on "The Relation of General Culture to Professional Success" And the celebrated Dr. Stokes, a generation ago, laid it down as a maxim that "We must trust far less to the special than to the general training of the mind." My own observations and reflections as an educator and a student of the human mind have led me to the same conclusion. Generally stated, my view is that the mind in order to know anything well must know far more than that thing—and the more extensive and intensive that "more" is, the better will the narrower specialty be understood and the readier will be the power of applying it. I have had striking confirmations of this principle in my intercourse with professional men. The leader of the American bar once told me that he owed his success in his profession to his college work in philosophy and the languages. The Nestor of American journalism assured me that whatever reputation he had achieved was due to his college training in classics and mathematics. And as I scan the biographies of the men who were eminent in the medical profession, I find that Harvey devoted five years to academical studies at Cambridge before he went to Padua to study anatomy; that Richard Bright studied philosophy under Dugald Stewart; that Sir James Y. Simpson was a student both of mathematics and ethics; and that Sir Joseph Lister took his A. B. at the University of London five years before he came up for his medical degree. To every prospective medical student I should like to say, Go thou and do likewise.

Undoubtedly this will make large demands upon the time of the student. Now it is not necessary that any young man should be a physician or surgeon; but if he decides to become one he should aim at nothing less than the first rank. Here, too, as at other points, Cornell University will give him aid and encouragement. In our Academic Department the student has absolute liberty in the choice of studies. So that if our future medical student enters that course he may, without neglecting letters or philosophy, master thoroughly his anatomy, physiology, histology, chemistry, physics, and botany, and at the end of four years receive his A.B. degree. There then would remain of the medical curriculum only the professional branches, which he could compass in the next two years in New York City. Thus, thanks to our elective system, he would win both the A.B. and M.D. degrees in six years—though each separately requires four years.

It will then be to the advantage not only of the University and its Medical College, but of the student and the general public, if the relationship between the Academic and Medical Departments become closer and more constant. I hope to see it the rule for our students of medicine to spend four years at Ithaca in the study of letters, philosophy, and science—the latter covering in a thorough way the theoretical parts of the medical curriculum—and then two years here for instruction in the practical part of the curriculum, for which this great city offers unsurpassed opportunities. This Faculty of Medicine would, I am sure, rejoice if this arrangement were the general and normal one. Our Founder would rejoice, for his aim is not to attract numbers, but to offer superior training for those, be they few or many, capable of receiving it. And if along with this ideal of high intellectual standards we entertain a just conception of the inherent nobility of the medical profession—whose aim now and always is to discover and use the laws of Nature for the benefit of mankind—we shall, in this new college which we now open, erect a temple whose foundations are truth and whose superstructure is charity and philanthropy. And upon it and all its members I reverently invoke the blessing of God, who is at once both Truth and Love.

# WAR ARTICLE.

## SANITARY DIARY OF THE PORTO-RICAN CAMPAIGN.

BY JOHN McG. WOODBURY, M.D.
MAJOR AND CHIEF SURGEON, U. S. V.; SANITARY INSPECTOR AT PONCE, PORTO RICO.

THE following order, which was issued by Major-General Miles, just previous to the landing of the army in Porto Rico, shows the admirable wisdom and forethought to which his command owes its good health, and the avoidance of a repetition of the sad scenes at Siboney and Santiago, in Cuba.

Headquarters of the Army,
On Board U. S. S. "Yale," en route
for Porto Rico, July 25, 1898.

General Field Order No. 2.

PAR. I. In order to prevent, as far as possible, the introduction of yellow fever into the command now about to land on the island of Porto Rico, the following will be strictly observed:

1. All persons connected with the army are forbidden to enter any building whatever on the Island without special authority from these headquarters, and all buildings and rural districts that may be suspected of harboring the germs of that disease should be destroyed by fire or thoroughly disinfected. No natives, except authorized guides, and those having permission from these headquarters will be allowed to enter camp.

2. As woven goods, particularly those of woolen fabrics, are special carriers of disease, the purchase or acceptance of articles of this kind from stores or inhabitants of the Island is strictly forbidden, and any such property found within the lines will be at once destroyed and the holder subjected to punishment. Commanders of regiments and of battalions will prepare their camp-grounds with great care and maintain a rigid police in them. Under no circumstances will they camp on ground that has previously been occupied by troops or by collective bodies of inhabitants. They will require medical officers to make frequent inspections of the commands to which they belong and all suspicious cases of fever will be isolated immediately, and the fact of occurrence reported to these headquarters.

3. Canteens should be filled daily with tea or coffee, and these beverages used habitually instead of water, unless that has been previously boiled.

II. An officer, to be designated hereafter, will take command of the base of supplies, and is hereby authorized to indicate the sites to be occupied by the various supply departments and hospitals, and will enforce the regulations governing the health of the attaches of these departments, and all persons who may visit them on business, or otherwise.

III. A sanitary inspector will be appointed from these headquarters, whose duty it will be to examine all vessels and persons arriving at our base from other ports or places, and who will prepare sanitary regulations for the government of all transportations and of persons arriving and departing from the station by land. He is hereby authorized to quarantine all suspicious persons and means of transportation and to disinfect their belongings either by fire, or by such other means as may be deemed necessary.

IV. All persons, whether soldiers or civilians, who may be captured, will be taken to a camp of detention, to be located at a point isolated from the general camp and no communication allowed with them, except through persons specially designated by the officer in charge.

V. Under no circumstances will a regular foraging upon the country be allowed. Whenever it may be necessary to procure supplies of grain, provisions, horses, etc., the foraging party will be in command of an officer, who will treat all well-disposed inhabitants with careful consideration, and will in every case pay cash or give a properly signed receipt in duplicate in lieu thereof.

V. This order will be read and re-read until each commanding officer is satisfied that every person of his command is thoroughly familiar with its provisions.

By command of Major-General Miles.

J. O. GILMORE,
Brigadier-General, U. S. V.

I was appointed by General Miles to the Sanitary Inspectorship of the Island in accordance with the terms of this order. Immediately afterward I inspected the jail at Ponce. This is the common "calaboso" into which the felons great and small are indiscriminately crammed by the Spanish authorities, and is situated just in the rear of the City Hall. It is built of brick covered with stucco on the outside. Its plan is that of a parallelogram, twice as long as broad, enclosing a central court, the space from the inner wall, or walk of the court, to the outer wall being roofed in flat tile upon which sentries were constantly posted. The inside was arranged like a cloister around the four sides of the parallelogram. It was dark and as profoundly filthy as only a Spanish prison can be, and the odors were beyond description. The lavatories and sinks were in an unbelievable condition. The criminals, being herded together like animals, were filthy to a horrible degree and were covered with vermin. Many were afflicted with loathsome skin diseases.

The caserne or barracks which had been so hastily abandoned by the Spanish troops of the 25th Battalion of infantry were in an equally filthy condition, the drain being choked and the place alive with vermin. This is a large, finely constructed building, having quarters for 500 men and officers. Well and solidly built, with no wood but the doors, it was easily disinfected and cleaned. The Spanish military hospital, which is a fine building one year old, having four wards and accommodations for about 400 men, is located upon a high hill at the outskirts of the town. It is thoroughly drained, and we were indeed fortunate to find such a hospital ready to hand. But its drain was choked, and the two wards which were then occupied by Spanish sick were filthy. The lunatic asylum was but a little, cramped road-section house, built for the shelter of the peons working on the highway between Ponce and San Juan. It was as filthy as all the other public buildings, and its wretched inmates covered with vermin, were cared for by two male

attendants. This den, as explained to me, was but a reception hospital for patients, later on to be transferred to the central asylum at San Juan.

The camping-ground of our troops was on a plain north and east of Ponce, an old sugar-cane field, the soil a black alluvial deposit of volcanic detritus washed from the hills by the Rio Portugese.

Finding the city to be without any health organization, I summoned, through the *Alcalde*, R. Ulpiano Colom, a clever and most able man and a pronounced American sympathizer, all the medical practitioners of the district of Ponce to meet me and organize a board of health. They chose for their representative Dr. Moret, who graduated at the Bellevue Hospital Medical College, New York, in 1880. He, with his Honor, the *Alcalde* of Ponce, and the syndic, ex-officio, now compose the Board of Health of Ponce. The board has charge of all matters of municipal sanitation and the Street Cleaning Department, as well as condition of water-supply. The three members composing the board then chose four inspectors, one for each of the wards of the town. These were *medicos titulares*, or "doctors of the poor." The rules for their direction, translated into English, are as follows:

I.—The Inspector will examine each day the district to which he is appointed.

II.—He will report each day its general sanitary condition:

*a*. Condition of streets, their cleanliness, presence of refuse, garbage, or waste paper, etc.

*b*. All odors from vaults, privies, cesspools, etc.

III.—The sanitary condition of the factories.

IV.—The condition of the slaughter-houses, whether clean, odorless, and the method of the destruction of its refuse.

V.—The condition of the market, whether clean or filthy, any negligence on the part of the vendors, and the cleanliness of their respective stalls and tables.

VI.—The condition of the public schools, their water-closets and floors, and general sanitary condition.

VII.—Where suspected, from odors, that the privy-vaults are in bad condition they shall be inspected and the result of the inspection communicated at once to the Board of Health.

VIII.—The condition of the yards and stables connected with the houses in which horses, cattle, or other animals are kept.

IX.—The livery-stables, their condition, the disposal of their manure. The diseases of horses that are contagious.

X.—While all physicians are required at once to report to the Board of Health any contagious diseases, as by list (diphtheria, smallpox, yellow fever, typhus, scarlet fever, measles, and chicken-pox), the inspector is required to examine any such cases in which any doubt may exist as to diagnosis, and his judgment is final.

XI.—The medicos titulares shall immediately inform the board of any of the above disorders occurring among the poor in their charge. The inspector will examine the case and order it to the proper hospital, or quarantine the sick in their own house if in his judgment it be proper.

A number of copies of these rules were given to each of the medical men in Ponce, and the substance enforced as accurately as possible. The immediate questions pressed upon the members of the board, with whom I meet three times a week, were:

1. *Street Cleaning*.—This was immediately began, and in some districts has been carried on quite well and will be pushed.

2. *The Public Water-Supply*.—This is derived from the Rio Portuguese. The intake of the aqueduct is about three miles from the city, at a pond formed by a dam about six feet high across the river. This pond has been almost filled by silt and the deposits caused by the wash of the heavy rains. It has been arranged to have the pond cleaned thoroughly and scraped out and another heavy galvanized iron strainer placed over the intake. The members of the 1st Regiment U. S. Volunteer Engineers are arranging detailed plans for a filter-bed to be constructed at the city terminus of the aqueduct before it branches or empties into the small reservoir that is built at its city end. This will be a great improvement, as in times of heavy rain the water is greatly loaded with earth.

The valley of the Rio Portuguese, which I have carefully inspected, is clean and only occupied by infrequent coffee estates, the drainage from which is inconsiderable. The purchase of a filtration-plant was recommended by the Health Board, but the emptiness of the city treasury preventing, the Engineers were applied to, with marked success.

3. *The Disposition of the Dead*.—The method at present in use must be immediately changed. The cemetery is in the town and is surrounded by dwellings. The dead of the wealthier classes are put into catacombs built above the surface of the ground and securely bricked up, and the entire tomb covered with a stucco surface. The public dead are buried in tiers in the ground, one on top of the other, and in a few years the ground is dug up again, the bones remaining being thrown out and the same space used repeatedly. This has been stopped, a proper site chosen for a new cemetery, the purchase money voted by the town council, and a proper place for the decent disposition of the dead arranged. The small cemetery at the Port of Ponce, used for the burial of our soldiers who have died in hospitals, is totally improper and insufficient. Some action should be taken by Congress at once to provide a suitable place for their interment. I have heartily endorsed the idea of the disposition of all dead by cremation, and am certain that in this extreme climate, and in the circumstance of so much sickness as accompanies the army of occupation, that I am right, and that cremation is the proper method for the disposition of the dead. This, however, meets with no approval from church, chaplains, or the sentimentalists. The climate renders the keeping of a body a danger and an offense, and all I have been able to enforce, so far, has been to hasten the interment.

What has been accomplished, so far, is the thorough disinfection with bichlorid of mercury and sulphur fumigation of the city prison, its cleansing by scrubbing and by whitewash, clearing of its drains, rebuilding of its sinks and latrines, and enforcement of cleanliness among its inmates. The floors and sleeping platforms are being rebuilt at present. The Spanish military hospital has been cleaned and fumigated twice, drains taken up and cleaned, and sinks and latrines rebuilt. This hospital has been the general military hospital at Ponce, and now, with its tentage extensions, is the central hospital for collecting the patients from surrounding commands. The having at hand such a building, and the rapid and efficient work of Surgeon-Major Daily in cleansing it under great pressure of necessity, has proved a great aid to the medical arm of the service.

The caserne, or barracks, which is now fit for use and is occupied by a detachment of the 19th Infantry, has been most thoroughly fumigated, scrubbed, and cleaned; the sinks have been rebuilt, drains cleaned, and the place rendered suitable for occupation. This will provide a most adequate shelter for the 400 troops necessary to garrison Ponce permanently, makes them comfortable and dry, and gives them the best hygienic surroundings. All captured woolen uniforms and clothing have been burned. Some bales of new cotton clothing having been boiled for an hour might be used, as they are sterile. No troops are quartered in buildings save the provost-guard on the roof of the jail, those in the caserne, and the provost-guard at Pleya, the port of Ponce, which is quartered in a lumber yard and sheltered by a shed. I have inspected the sheds which the Government has used at Pleya as storehouses, and find them after their policing clean and fit for use.

The camps of our troops are dry and well drained, and I could only earnestly recommend the enforcement of the stringent order against the men drinking the water and filling their canteens from the streams where the inhabitants were washing their clothes. Under the able administration of Colonel Greenleaf there has been an accurate uniform attempt on the Island to arrange beforehand for any sickness. With such a careful hand at the helm there is little probability that a breakdown and overcrowding of hospital service will occur. Of course, there are worthless men everywhere and some of them disgrace our profession, but all I have met here on my daily round of inspection are hard at it trying honestly to carry out Chief-Surgeon Greenleaf's orders, and, fortunately, we have been so supplied that there is no want either of cots, medicine, or food. In the general hospital good native cooks have been hired and are at work. They seem to do well. Of course, the general hospital is not to be compared with any of our best at home, but it is clean, the food is plenty and good, and it is most efficiently managed.

## THERAPEUTIC NOTES.

***Anytin and Anytol.***—LOEFFLER (*Therap Monatshefte*, July, 1898) describes the properties and uses of anytin, a new chemical compound containing carbonic acid, oxygen, and hydrogen, 16.5 per cent. of sulphur, and 4.5 per cent. of ammonia. It is a brownish-black, very hygroscopic powder, making a clear solution in water in all proportions. It is precipitated from its solution in water by solutions of an alkali, similarly to the formation of soaps. Its chief value lies in its power to make soluble in water substances which are ordinarily not so. Hence, many substances which have had as disinfectants only a limited value, can be used in much stronger solutions than heretofore, and so made more effective. Anytin itself is not a strong disinfectant. It has not been found to contain living germs, but spores of different kinds may remain in it without losing their vitality.

A one-per-cent creasol-anytol solution has the disinfectant worth of a three-per-cent. carbolic one. All spores were destroyed in thirty-six hours in a ten-per-cent. creasol-anytol solution, whereas a five-per-cent. carbolic solution requires sometimes as many as sixty hours to destroy anthrax bacilli. For the preparation of catgut he recommended that the gut be allowed to remain in a ten-per-cent. solution for thirty-six or forty-eight hours and then preserved in alcohol. In this manner the gut was not injured in the least, although a week's soaking materially lessened its strength. A three-per-cent. solution has very little effect upon the skin, and a ten-per-cent. solution none at all. Tampons saturated with a one-per-cent. or two-per-cent. solution, and introduced into the nostrils and kept there for three or four hours, sufficed to limit the formation of crusts, and removed almost entirely the disagreeable odor of ozena. A three-per-cent. solution is recommended in the local treatment of diphtheria.

***Quick Cure of Erysipelas.***—SCHULTZE (*Therap. Monatshefte*, July, 1898) saw an erysipelas develop in the skin of the right hand of a patient who was recovering from a cellulitis of the member. The local and general characteristics of erysipelas were all present, and the trouble was spreading rapidly. Owing to the favorable situation of the trouble an old method of treatment was revived, an attempt being made to limit the further spread of the germs by the injection of a three-per-cent. carbolic solution into the skin all around the arm. Care was taken to make the injections solely in the substance of the skin, according to the infiltrating plan recommended by Schleich. Inside of three hours the patient felt decidedly better, and there was a fall of two degrees in his fever. On the next day the pain and fever had entirely disappeared, and the swelling subsided the day following.

***To Relieve the Pain of Burns.***—

℞ Cocain hydrochlorat. . . . gr. v
Camphoræ carbolat. } aa . . ʒ ss.
Ol. olivæ }

M. Sig. External use.

The cocain is to be thoroughly dissolved in the carbolate of camphor before adding the olive oil. Intensely painful burns are said to be quickly relieved by the application of this mixture.

# THE MEDICAL NEWS.

## A WEEKLY JOURNAL

## OF MEDICAL SCIENCE.

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SATURDAY, OCTOBER 8, 1898.


### WOUNDS OF THE HEART.

THE fact that the late Empress of Austria was able to walk some distance and go on board a steamer after receiving a fatal wound of the heart (for the necropsy showed that the heart had been completely penetrated) has been the occasion of no little surprise. The *Lancet* points out the fact that there are in medical literature records of survival of considerable duration after small heart wounds.

According to the *Supplemento et Polyclinico*, August 20th, and quoted by the *Lancet*, a remarkable case of penetrating wound of the heart occurred this past summer at Rome, Italy. On July 9, 1898, Dr. Parlavecchio reported to a medical society at Rome a case of punctured wound of the heart in which he had operated eight hours after the infliction of the wound, and saved the patient's life. The patient, a man twenty years of age, two days previously was stabbed with a knife in the fifth intercostal space, in a vertical line midway between the border of the sternum and the left nipple. He afterward walked to the hospital, a distance of 218 yards. Five hours later he was found to be suffering from pneumothorax on the left side, with extensive effusion, probably of blood, into the pleural cavity; the area of cardiac dulness was increased; at the apex the heart sounds were confused, and at the base they seemed distant; the pulse was irregular, intermittent, and small. Dr. Parlavecchio suspected a wound of the heart, or at least a wound of the pericardium, and proceeded to operate as soon as possible, although delayed in his preparations till eight hours after the injury. Chloroform was given and a free incision made in the fifth intercostal space, through which much blood escaped on opening into the pleura. Upon resection of the fifth rib a wound admitting two fingers was found in the pericardium. This was enlarged to expose the heart, in which a V-shaped wound, one and one-half inches long, was discovered near the apex, penetrating obliquely the left ventricle, and intermittently discharging blood. Four interrupted deep silk sutures were applied, which completely controlled the hemorrhage. The pericardial and intercostal wounds were then sutured, the entire procedure lasting forty minutes. The V-shape of the wound was probably due to the movement of the heart during the infliction of the wound, and the survival of the patient during the eight hours preceding the operation is explained by the occlusion of the heart wound by a clot. No clot was found there, but it may have been displaced by the struggles of the patient during anesthesia. The subsequent history of the case was uneventful, the patient insisting on leaving the hospital August 14th, five days after the operation.

### A PLEA FOR JEJUNOSTOMY.

THE relative unfamiliarity of even widely experienced surgeons with this operation, is sufficient excuse for discussing it from the theoretic standpoint of medical needs, rather than surgical attainments. The establishment of a more or less permanent fistula into the alimentary canal is justified by one of two necessities: the introduction of food and the outlet of feces. The most rudimentary physiologic study makes it plain that the former purpose cannot be satisfactorily fulfilled by an opening lower than the upper part of the jejunum; while the latter purpose would be defeated by the abstraction of needed nutriment and water if the opening were higher than the lower part of the ileum, although

circumstances may demand the establishment of an artificial anus at a higher point, for purely mechanical ends, notably the relief of intra-intestinal tension. Because of anatomic difficulties, fistulæ are not applicable to the esophagus and scarcely to the duodenum. Even if a fistula can be made into the duodenum, physiologic reasons contraindicate such an operation, from the propinquity of the pylorus and of the ducts of the two large tributaries to the intestine, namely the liver and pancreas. In a sense, this is an anatomic objection but it is so on account of physiologic processes, not on account of operative difficulties. Thus, an alimentary fistula affords a choice only between the stomach and the jejunum.

The real value of this operation has been overlooked. We can get a clue to its proper employment by considering: (1) the successful case of Hahn's in which physiologic rest of the stomach afforded by the jejunal fistula allowed the esophagus and stomach to return to a practically normal condition after two weeks; (2) the experience of various surgeons in cases of intestinal tuberculosis treated by entero-enterostomosis, and (3) the well-known postponement of death from ineradicable rectal cancer, by the establishment of an artificial anus. Senn and others have reported almost miraculous cures of intestinal tuberculosis by short-circuiting the affected part and allowing it physiologic rest. The withdrawal of the irritation of feces from a rectal cancer has often deluded the patient into a belief that the growth had become quiescent, and life has been prolonged just in proportion to the delay of the growth of the malignant focus. Why is it that it has never been seriously considered that the withdrawal of irritation from a gastric cancer is just as good treatment as the same principle applied to other cancers at an ineradicable stage?

Gastrostomy is a perfectly proper operation for cicatricial or perhaps syphilitic stenosis of the esophagus, and should, doubtless, be preferred to jejunostomy in all such cases in which the condition of the stomach allows a choice. But when the obstruction of the cardia is malignant, all that can be said in favor of this operation is that it prevents the patient from starving to death immediately. In the first place, it is contrary to the principle of side-tracking an inoperable lesion to allow a cancer of the cardia to be irritated by peristalsis, hydrochloric acidity, the impact of food-particles and the various organic irritants that are produced even in the preliminary stage of the most perfect digestion. Secondly, there is certainly not more than one chance in five that a stomach with a cancer at the cardia will be able to perform proper digestion or even prevent improper fermentation. There is a very prevalent idea that it is possible to apply one disease-name to almost every diseased stomach, but, as a matter of fact, it is very rare to find an organ which has only one disease. With cancer of the cardia we should rather expect deficiency of secretion, both of hydrochloric acid and later of the ferments, so that malfermentation would result; in many instances, this secretory disturbance would be not merely functional but the mark of a gastritis; dilatation of the stomach of moderate degree is quite common with stenosis of the cardia. I have seen —and certainly every surgeon and pathologist must have had much greater experience in the same line— the fistula itself involved in an extension of the malignant disease of the cardia. Thirdly, a gastric fistula in cases of cancer of the cardia not only allows irritation of the growth and faulty digestion but it is responsible for introducing toxic material into the intestine and thereby not only depressing the system but directly interfering with intestinal digestion. The toxic material has two sources, the cancer itself and the improperly digested food. The stomach is not a particularly valuable organ but, like some persons, owes its reputation for importance to its capacity of making trouble when it is disturbed. Not only the recent observation of patients from whom the entire stomach has been removed but similar experiments on animals and the study of cases of gastric failure in which motility remains good, have demonstrated that the bulk of the digestive processes falls to the intestine and its tributaries. If the stomach is not normal, it is far better to insert the food directly into the bowel than to pass it through a cavity that can only add to its irritating qualities. Thus, jejunostomy should be the operation of choice in all cases of malignant disease of the cardia.

When cancer of the pylorus has progressed beyond the possibility of a radical operation, gastro-enterostomy is almost universally conceded to be the desideratum. But the same arguments that have

been adduced against allowing food to enter the stomach when the cardia is affected with malignancy, apply *a fortiori* to cases of pyloric cancer. Especially is it to be noted that while, in cancer of the cardia, there is a general tendency to achlorhydria, atonic dilatation and catarrh, a pyloric growth of sufficient importance to call attention to itself must, almost necessarily, have produced stagnation, dilatation, and irritative catarrh of the stomach. To pass food through such a cavity when a clean, disease-free entry into the jejunum can be effected is contrary to all medical principles. Thus, it seems that gastrostomy and gastro-enterostomy should be superseded by jejunostomy in all malignant cases, unless some purely mechanical obstacle prevents a choice.

At this point, the student of internal medicine should leave the subject to the surgeon, it being the province of the latter to work out the operative details. But, as the operation is unfamiliar, even to many competent surgeons, and as certain practical operative procedures are necessitated by essentially physiologic considerations, I may be pardoned for considering the operation somewhat in detail. The first operations of jejunostomy consisted in making a simple lateral enterostomosis. These, however, allowed considerable leakage of food and great discomfort was produced by excoriation, or rather digestion, of the skin. In general any animal secretion causes more or less dermal irritation, but the digestive fistulæ are apt to be particularly troublesome on account of their bulk and digestive properties. The skin, however, is protected by its oily secretion, and pepsin is nearly inert as soon as the hydrochloric acid of the gastric juice is neutralized or organically combined. In most cases for which gastrostomy is performed, hydrochloric acid is reduced to a minimum. On the other hand, the jejunal contents consist largely of pancreatic juice, which attacks and splits fatty materials and which acts energetically on even raw proteids, in anything but a highly acid medium. Thus, the leakage from a jejunal fistula is almost caustic in its effects on the skin.

To obviate this difficulty, Maydl cut the intestine, implanted the distal end into the abdominal wound and made an end-to-side anastomosis between the proximal end and the efferent bowel. Albert made a side-to-side anastomosis and brought the kinked portion of the jejunum into the abdominal wound, making a second side-to-side anastomosis and narrowing the gut to form a fistulous entry. Karewski's modification seems the best and simplest of all. Briefly described, it is the same as Witzel's operation for gastrostomy, substituting the jejunum for the stomach and using, by preference, a silver cannula. The after-care of the case demands frequent feeding, with comparatively small quantities of nutriment and the physician should be consulted so as to insure a proper amount and proportion of the various kinds of food. All that the general practitioner can ask of the surgeon is that the latter operate on the jejunum instead of the stomach in the class of cases mentioned, and that the operation be such as to leave a water-tight fistula.

A. L. Benedict, M.D.

## ECHOES AND NEWS.

***Health of Troops at Honolulu.***—Major-General Merriam reported to the War Department September 11th that he had inspected the kitchens and camps at Honolulu and found them in a sanitary condition and the health of all the troops very good.

***Appointments at Bellevue Hospital.***—The following appointments have been made to the university staff of this institution: Dr. Henry C. Coe, gynecologist; Dr. Geo. D. Stewart, surgeon; Dr. Egbert Le Fevre, physician; Dr. L. Bolton Bangs, genito-urinary surgeon; Dr. B. Farquhar Curtis, surgeon.

***Dr. Pepper's Successor.***—The faculty of medicine of the University of Pennsylvania, at a recent meeting recommended that Dr. James Tyson of Philadelphia be given full and general direction of the branch of Theory and Practice of Medicine, and that Drs. John H. Musser, Alfred Stengel, M. Howard Fussell, and Frederick A. Packard be appointed to deliver, under Dr. Tyson's supervision, the didactic lectures pertaining to the subject.

***No Rest for the Ashes of Columbus.***—The often-disturbed remains of Columbus are to make at least one more move. He was buried at Valladolid, Spain, but was soon after transferred to Seville. Thirty years later his remains were removed to Santo Domingo. When that island was abandoned to the French, these sacred relics were taken to Havana, Cuba, and now they are going back again to the country of his adoption, which he honored so highly.

***New President of the Wistar Institute of Philadelphia.***—Provost Charles C. Harrison, of the University of Pennsylvania, has been elected to the Presidency of the Wistar Institute of Anatomy and Biology, made vacant by

the death of Dr. William Pepper. Although the Institute is not a part of the University of Pennsylvania, it is under the control of its trustees. Its funds are held under a separate charter, and it is governed by a board of nine managers, six of whom are elected by the university trustees.

***New York State Medical Association.***—The chairman of the Committee of Arrangements of this association reports, in connection with the meeting to be held in New York City, October 18th, 19th and 20th, that the usual reduction in railroad fares to one and one-third fare for the round trip has been secured to the members of the association and their families, provided one hundred persons avail themselves of the privilege. The usual certificate and endorsement attending such an arrangement will be insisted upon. The committee has also completed arrangements for a banquet on the evening of October 19th. More than one hundred have signified their intention of being present.

***Metallic Sinks for the Army.***—One result of the study of camp conditions is the recommendation of a metallic-lined sink, sixteen feet in length, two feet wide, and eighteen inches deep. A water-pipe is connected at one end and a waste-pipe at the other. The trough is to be filled daily with water in which lime is to be placed. The trough is cleaned by flushing it through the waste-pipe into a covered sink or into movable receptacles which can be dumped at properly selected places. It is recommended also that similar movable sinks be constructed and placed on wagons. The whole apparatus can then be moved daily and the contents of the trough deposited at the appointed place. These wagons can accompany an army on the march.

***Surgical Instruction at the University of Pennsylvania.***—On account of the illness of Dr. John Ashhurst, the general supervision of surgical instruction has been given to Dr. J. W. White, formerly Professor of Clinical Surgery, and didactic lectures in this branch will be given by several of the younger members of the teaching staff. Dr. Henry R. Wharton, Demonstrator of Surgery, and Dr. Alfred C. Wood, Instructor in Clinical Surgery, are being considered as probable appointees. About two months ago Dr. Ashhurst was stricken with apoplexy at his home in Overbrook. He survived the shock, and his intellect is now clear and his judgment good. He would be able to carry on his work but for the attending paralysis.

***Sanitary Conditions at Manila.***—An officer on the staff of General Greene, writing August 9, 1898, says: "The weather has been very bad for the past few days; it has rained constantly, the ground is full of moisture, and everything is damp, wet, and nasty; the humidity is very great all the time. We are very comfortably situated, having a house about twenty feet square, which is raised from the ground about two feet. The men are fairly comfortable and are in shelter-tents raised above the ground from eighteen to thirty-six inches. They make a bed of bamboo and pitch the tent on top of it. The health of the men is excellent and their morale is very high. There are no mosquitoes here and not many bugs and we have seen no snakes as yet. The camp is about midway between Cavité Point and Manila."—*Army and Navy Journal.*

***Medical Schools of New York City.***—The College of Physicians and Surgeons and the University and Bellevue Medical School began their winter's sessions on Monday, October 3d. At the latter institution, Dr. Edward G. Janeway, dean of the faculty, addressed all the students in the large lecture-room. He outlined the courses for the year and said that the class of 1899 will be the last to be graduated in the three-year's course. After that the course will be four years. The class entering this year is the largest in the history of the college. The sessions will be conducted in the new building at Twenty-sixth street and First avenue. The Cornell University Medical College inaugurated its existence by public exercises held in the main amphitheater on Tuesday evening, October 4th. President Schurman of Cornell University made a formal address (see page 462). Dr. Wm. M. Polk, dean of the faculty, followed with some remarks in behalf of the faculty. After the public exercises an impromptu reception was held. The school opens with about five hundred students in attendance, most of them from out of the city.

***Yellow Fever.***—The United States Marine Hospital Service makes the following report concerning yellow fever, from July 20 to September 29, 1898:

| Place. | Date. | Cases. | Deaths. |
|---|---|---|---|
| Louisiana: | | | |
| Baton Rouge | Sept. 25 | 1 | — |
| Franklin | " 24 | 106 | 5 |
| Harvey's Canal | " 24 | 6 | — |
| Houma | " 22 | 1 | — |
| Jefferson Parish | " 24 | 5 | 1 |
| New Orleans | " 17 | 1 | — |
| " " | " 20 | 2 | — |
| " " | " 21 | 1 | — |
| " " | " 24 | 2 | — |
| " " | " 28 | 6 | 1 |
| Wilson | " 26 | 12 | — |
| Mississippi: | | | |
| Edwards | " 27 | 1 | — |
| Jackson | " 27 | 9 | 2 |
| Orwood | " 27 | 67 | 3 |
| Oxford | " 27 | 13 | 4 |
| Taylor | " 27 | 82 | 8 |
| Waterford | " 9 | 1 | — |
| Water Valley | " 28 | 1 | — |

Later advices indicate a steady advance of the disease in certain localities. October 2d, Jackson, Miss., reported twenty-two cases with three deaths to date. Detention camps are being established at various places.

***The Mississippi Valley Medical Association.***—The twenty-fourth annual meeting of this association will be held October 11, 12, 13, and 14, 1898, in the Capitol at Nashville, Tenn. Provisional program. First day, morning session, 10 o'clock: Address of welcome; reports of officers and committees; executive business; president's inaugural address. Papers: "The Relations of the Gyn-

ecologist and the Neurologist," W. H. Humiston, Cleveland, O.; discussion opened by C. H. Hughes, St. Louis, and Jos. Price, Philadelphia, Pa.; "Diagnostic and Therapeutic Uses of Tuberculin," Chas. W. Aitkin, Flemingsburg, Ky.; "Immunity," Chas. T. McClintock, Detroit, Mich.; "Hygiene *versus* Drugs in Pulmonary Tuberculosis," Charles L. Minor, Asheville, N. C.; "Some of the Factors That Predispose to Tuberculosis," L. P. Barbour, Tullahoma, Tenn.; "The Bicycle from the Medical Standpoint," I. N. Love, St. Louis, Mo.; "Therapeutic Value of Marmorek's Serum," W. L. Baum, Chicago, Ill.; "Tumors of the Parietal Lobe of the Cerebrum," T. A. Davis, Chicago, Ill.; "Unguentum Hydrargyri or Blue Ointment Administered by the Mouth," Albert Bernheim, Paducah, Ky. Afternoon session, 3 o'clock: "Wounds of the Lachrymal Apparatus: Report of Operation for Restoration of Canaliculi Obliterated by Traumatism," Geo. F. Keiper, Lafayette, Ind.; "Mastoiditis; When to Operate and How," Andrew Timberman, Columbus, O.; "Prophylaxis in Diseases of the Nose and Throat," J. Homer Coulter, Chicago, Ill.; "Three Anomalous Cases of Mastoid Disease," J. L. Minor, Memphis, Tenn.; "Report of Holocain as a Local Anesthetic in Ophthalmic Surgery," E. C. Ellett, Memphis, Tenn.; "Incarceration of the Iris Relieved by Eserin: Report of a Case," Frank Trester Smith, Chattanooga, Tenn.; "A Case of Bilateral Glioma of the Retina: Operation, Non-recurrence in Seventeen Years," A. G. Sinclair, Memphis, Tenn.; "Tonsillitis or Quinsy: Cause and Treatment," J. A. Stucky, Lexington, Ky.; "Remarks on Hydrophthalmus, with Report of Two Cases," James Moore Ball, St. Louis, Mo.; "Conservatism in Oral Surgery," Truman W. Brophy, Chicago, Ill.; "Neuralgias Due to Nasal Origin," Edward T. Dickerman, Chicago, Ill.; "Headache as a Symptom in Eye Disease," W. H. Wilder, Chicago, Ill. Second day, morning session, 9:30 o'clock: Address in medicine, Dr. James T. Whittaker, Cincinnati, O. Papers: "Complete Inspection of the Rectum by Means of Newer Mechanical Appliances," Thos. Chas. Martin, Cleveland, O.; "The Relationship between the Genito-Urinary Tract and Rectum: In Operations upon the Female, Which Should Receive Priority?" John L. Jelks, Memphis, Tenn.; "Rectal Fistula," J. R. Pennington, Chicago, Ill.; "The Surgical Management of Complex Progressive Ischiorectal Fistulæ," Leon Straus, St. Louis, Mo.; "Hydrotherapy in Stomach Diseases," Geo. D. Kahlo, Indianapolis, Ind.; "Phases of Toxemia from Disturbed Metabolism," Thos. Hunt Stucky, Louisville, Ky.; "The Vascular Dermatoneuroses," A. E. Brayton, Indianapolis, Ind.; "A Clinical Report of a Case of Abscess of the Liver," Edwin Frazer Wilson, Columbus, O.; "The Importance of Early Diagnosis in Surgical Cases," J. C. Morfit, St. Louis, Mo.; "Gonangiectomy and Orchidectomy for Hypertrophied Prostate in Old Men," George W. Johnson, Dunning, Ill. Afternoon session, 3 o'clock: "Why I Have Abandoned the General Practice of Vaginal Hysterectomy," B. Sherwood Dunn, Boston, Mass.; "Why I Do Vaginal Ablation in Pus Cases," Wm. R. Pryor, New York City; "A Consideration of the Limit to Operative Gynecology," Shelby C. Carson, Greensboro, Ala.; "The Limits of Operations for Cancer of the Uterus," L. S. McMurtry, Louisville, Ky.; "Cancer of the Uterus," Louis Frank, Louisville, Ky.; "Surgical Treatment of Pus in the Pelvis," Joseph Price, Philadelphia, Pa.; "Some Pathological Conditions of the Ovaries Causing Pain," G. W. Halley, Kansas City, Mo.; "A Case of Abdominal Hysterectomy with Stercoraceous Vomiting; Recovery," H. Hatch, Quincy, Ill.; "A Plea for Pelvic Cellulitis and Peritonitis," F. F. Bryan, Georgetown, Ky.; "The Diagnosis of Gonorrhea in Women," J. Rilus Eastman, Indianapolis, Ind.; "Care and Repair of the Female Perineum," E. L. Larkins, Terre Haute, Ind.; "Clinical Contribution to Ectopic Gestation," W. W. Taylor, Memphis, Tenn.; "Retrodisplacements of the Uterus and Their Treatment," A. Morgan Cartledge, Louisville, Ky. Evening, general reception, Maxwell House. Third day, morning session: Reports of committees; address in surgery, Dr. Geo. Ben Johnson, Richmond, Va. Papers: "Observations on Surgery of the Kidney," Charles A. L. Reed, Cincinnati, O.; "Direct Diagnosis of Diphtheria," William K. Jaques, Chicago, Ill.; "Diphtheria and Its Logical Treatment," A. M. Osness, Dayton, O.; "Suprapubic Cystotomy *versus* Perineal Section," James M. Parrott, Kingston, N. C.; "When Shall We Operate for Appendicitis," Edwin Walker, Evansville, Ind.; "Some Clinical Phases of Intestinal Obstruction," A. H. Cordier, Kansas City, Mo.; "Practical Side of the Treatment of Gunshot Wounds of the Abdomen," H. Horace Grant, Louisville, Ky.; "Surgical Treatment of Ophthalmic Goiter," Bayard Holmes, Chicago, Ill.; "Some Forms of Gangrene and Their Treatment," J. S. Nowlin, Shelbyville, Tenn.; "Subperiosteal Removal of Caries from the Pelvic Basin, with the Report of a Case," S. E. Milliken, Dallas, Texas; "Surgical Treatment of Infantile Paralysis," Alex C. Wiener, Chicago, Ill.; "Interesting Surgical Cases," M. Goltman, Memphis, Tenn. Afternoon session, 3 o'clock: "Neurasthenia and Its Treatment," H. C. Sharp, Jeffersonville, Ia.; "A Unique Case of Hernia: Operation," Spencer Graves, St. Louis, Mo.; "Some More about Drainage." Arch Dixon, Henderson, Ky.; "The Triple Operation for Pyloric Stenosis," N. Stone Scott, Cleveland, O.; "Report of a Case of Obstetrics with Complications," R. C. Pratt, McKenzie, Tenn.; "Pichi," H. W. Whitaker, Columbus, O.; "A Few Practical Points in the Treatment of Posterior Urethritis," A. Ravogli, Cincinnati, O.; "Varicocele," F. E. Kelly, LaMoille, Ill.; "Syphilis," John M. Batten, Pittsburg, Pa.; "Prevention of Venereal Disease," David Lieberthal, Chicago, Ill. Fourth day, morning session, 9:30 o'clock: Installation of officers-elect. Papers: "The Neurohypothesis of Rheumatoid Arthritis," Frank Parsons Norbury, Jacksonville, Ill.; "Intermingling and Change of Type in Diseases," W. Gaston McFadden, Shelbyville, Ind.; "Mercury: Its Action," William F. Barclay, Pittsburg, Pa.; "How Should We Treat Typhoid Fever?" T. Virgil Hubbard, Atlanta, Ga.; "The Arthritic Diathesis," R. A. Bate, Louisville, Ky.; "A Triology of Diseases: Acute Articular Rheumatism, Endocarditis, Chorea," Albert E. Sterne, Indianapolis,

Ind.; "Cardiac Murmurs," S. W. Fain, Chattanooga, Tenn.; "The Artificial Production of the Plasmodium Malariæ and the Rational Treatment for the Removal of Same in Malaria," L. H. Warner, Brooklyn, N. Y.; "Opium in the Treatment of Epilepsy," Frank C. Hoyt, Chicago, Ill.

## CORRESPONDENCE.

### *IODOFORM IN PHTHISIS.*

*To the Editor of the* MEDICAL NEWS.

DEAR SIR:—In 1884 I began treating tuberculous patients with creosote, which was as much in evidence then as now, as a potent factor in the treatment of this scourge of mankind. I gave it in increasing doses so that 5, 10, and even 15 drops were taken three times a day. I was disappointed in every case in its efficacy. About 1893 I began to use strychnin, as recommended by Dr. Thomas Mays of Philadelphia, with apparently better results. It was administered hypodermatically to the physiological limit. Later I made a combination of strychnin, iron, and quinin. It then occurred to me to try to make, as nearly as possible, a local application to the diseased area of lung that thereby I might inhibit, if not destroy, the tubercle bacillus. Iodoform suggested itself as *the* drug for this important mission, iodoform being largely eliminated by the mucous membrane of the lung, so I added it to the above combination.

The results have been quite satisfactory in a rather large number of cases. No claim is made for it to cure advanced tubercular disease, nor to even mitigate *phthisis Florida*. But in incipient phthisis, when the patient begins to cough, accompanied by rapid pulse, pain in the chest, loss of appetite, and necessarily loss of flesh and strength, I have seen it act most advantageously.

I have never seen iodoform recommended in consumption, and in order that others may try it, and either prove or disprove the claim I make for its utility, is my chief object in writing this article. I began its use about eighteen months ago, and have given more than 2500 pills made from this formula:

℞ Strychnin sulphate . . . . . gr. i
Reduced iron
Quinin sulphate } aa . . . . ʒij.
Iodoform

M. Ft. pil. No. XL. Sig. One pill after each meal.

Probably there is some incompatibility in this formula between quinin and iodoform, for the reason that not infrequently a patient will complain of pain in the stomach after taking a pill. I always speak of this to the patient and instruct him to discontinue taking the pills for a few days and then to begin again, being careful to keep the bowels well open. I have used the formula above mentioned with the quinin left out, and there was no complaint made of pain in the stomach, yet I doubt if with as good results as when the quinin was present. One drawback to the internal administration of iodoform is the disagreeable eructations which follow.

Yours truly,

E. L. DAWSON, M.D.

CAMDEN, ARKANSAS, September 25, 1898.

### *OUR PHILADELPHIA LETTER.*

[From Our Special Correspondent.]

OPENING OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA AND OF THE WOMEN'S MEDICAL COLLEGE—DR. TYSON CHOSEN AS DR. PEPPER'S SUCCESSOR—PERSONAL NOTES—COMPENSATION TO HOSPITALS BY THE GOVERNMENT—HAHNEMANN'S WOES — PATHOLOGICAL SOCIETY MEETING—FOOD ADULTERATIONS—HEALTH-BOARD STATISTICS.

PHILADELPHIA, October 5, 1898.

PROVOST CHARLES C. HARRISON formally opened the 1898-99 session of the Medical Department of the University of Pennsylvania in the chapel of the college building last Saturday, October 1st. He spoke briefly of the war, calling attention to the safety and immunity with which large bodies of men had been transported from the fever-infected locality of Santiago de Cuba to a camp near a large populous center, a feat which he considered greater than any victory obtained in battle. Dr. Pepper's death was alluded to, tribute being paid to his devotion to the welfare of the university and to his personal attainments. The provost promised on behalf of the trustees the speedy erection of new and enlarged laboratory buildings for the study of pathology, pharmacy, and physiology, plans of which were outlined in the MEDICAL NEWS last spring.

The opening exercises of the Women's Medical College were held Wednesday afternoon, September 29th, the regular college work commencing on Thursday.

Dr. Gertrude A. Walker, Clinical Professor of Ophthalmology, delivered the introductory address, in which she urged the adoption by medical colleges of a universal standard of requirements for admission equal to that required by the classical colleges of candidates for degrees. She also urged students to beware of the pitfalls of quackery, Christian science, faith cure, and mind cure, which owe their existence to the great prevalence of hysteria in our race and to the ills dependent thereon.

Dr. J. William White, Professor of Clinical Surgery at the university, will have charge of all instruction in this branch owing to the continued illness of Dr. John Ashhurst, Professor of Surgery. Didactic lectures will probably be given by Dr. Henry R. Wharton and Dr. Alfred C. Wood.

Dr. J. C. Da Costa, Jr., Assistant Surgeon Eighth Regiment, has returned home on sick leave.

Dr. Isaac C. Detweiler of Reading last week celebrated his sixty-eighth birthday and the tenth year in which he has donated all his fees to church and missionary work of various kinds, his latest contribution having been $225 with which to provide bibles for soldiers in Cuba and Porto Rico.

Five hospital ships with 800 soldiers on board are expected to arrive in Philadelphia this week and as most of the men will be taken care of by the various city hospitals there is some agitation over the question of compensation for this work by the government. While many, if not all the hospitals were led by patriotism and public spirit in offering their services, the constantly increasing amount of work has become a heavy tax upon the resources of

several and the statement that New York hospitals are receiving 93 cents a day for each soldier in their care has aroused a great deal of interest.

Secretary French of the National Relief Committee says there is no doubt as to the validity of a claim against the government for this work and while some few hospitals may refuse compensation there is to be a meeting next week for the purpose of deciding whether to accept remuneration and if so the rate per diem for each soldier.

Hahnemann Hospital physicians have been considerably stirred up over the alleged discrimination against this institution in the distribution of sick soldiers brought here by the various hospital-trains. Dr. Charles Mohr, a member of the Board of Trustees of the hospital, took occasion to bring this matter before the meeting of the State Homeopathic Society last week and stated that although the hospital had offered the use of twenty-five beds to the authorities when the first and second hospital-trains arrived but two soldiers were received. In reply the authorities having the distribution in charge say that every man on the trains was asked his preference and only two selected a homeopathic hospital.

Trouble has been brewing for the Hahnemann in another direction also and the State Homeopathic Society deemed it necessary to adopt resolutions expressing confidence "in the integrity and ability of the faculty of the Hahnemann College of Philadelphia and in the integrity and ability of our State Homeopathic examining board." The trouble, it is said, was caused by the refusal of the State Board to pass twenty-two graduates of this college last spring.

At a meeting of the Pathological Society held September 22d Dr. J. H. Jopson presented a chylous cyst of the abdomen which occurred in a woman aged fifty. The cyst, which contained about 200 cubic centimeters of chylous fluid, sprang from the retroperitoneal space between the kidneys, being firmly attached to the duodenum. Dr. H. L. Williamson presented a primary adenocarcinoma of the fundus uteri. The woman from whom it was removed by hysterectomy eighteen months previously, enjoys perfect health at present.

Dr. Henry Cattell presented a specimen from a case of gangrenous appendicitis. This occurred in a boy who had previously had appendicitis two or three times, the last attack which proved fatal having been induced by trauma.

Three of the crew of the British brig "Sunlight," from St. Kitts, were sent to the Marine Hospital last Friday, suffering from "logwood fever," a fourth having died last Wednesday.

Decisions were given this week in several of the civil and criminal prosecutions brought by the State Department of Agriculture against storekeepers for violation of the Pure-Food Law. A penalty of $100 was imposed on nine different counts against one dealer and several others paid penalties ranging from $100 to $500.

The total number of deaths reported at the health office for the week ending October 1st was 382, of which 113 occurred in children under five years of age. The number of new cases of contagious diseases was 300, reported as follows: Diphtheria, 128 cases with 30 deaths; scarlet fever, 15 cases with 1 death, and typhoid fever, 157 cases with 24 deaths.

## OUR FOREIGN LETTER.

[From Our Special Correspondent.]

THE PROJECTED CHINESE UNIVERSITY AND SOME GERMAN ANTICIPATIONS — JAPANESE MEDICAL STUDENTS AT GERMAN UNIVERSITIES — AMERICAN MEDICAL STUDENTS ABROAD—THE QUESTION OF POST-GRADUATE MEDICAL INSTRUCTION IN AMERICA.

BERLIN, September 26, 1898.

THE recent official announcement of the Chinese Government to the Western Nations that she was about to formally open a Government University at Pekin, on the model of modern Western institutions, naturally attracted a great deal of attention in European university circles. China has learned from her little insular rival, Japan, the benefits of Western civilization. Her entrance into the educational field will be followed by an influx of Chinese into the European universities. If she imitates Japan in this as she has in most other things in her advance, the German universities will get the majority of her students who seek foreign parts. If the *number* of students who seek foreign instruction should bear any commensurate ratio to the comparative populations of the two countries then the Chinese students are apt to form an important factor in German university life in the early part of the next century after the savor of Western educational life shall have aroused some of the dormant appetite of the Celestials for modern culture.

At many of the German universities at present are to be found a select coterie of most intelligent, hard working students, some of them engaged in interesting original investigation, all of them doing solid work of the most important and fundamental character, who attract attention mainly by their retiring ways and thoroughly business-like attention to the matter in hand. They are the representatives at the university of the little Oriental island empire, that has attracted so much attention of late. Wherever an especially good course is being given, wherever particularly tempting opportunities for original work, or a special chance to follow closely the teaching of some maker of medicine presents itself, there Japanese students are to be found and usually in the immediate train of the master.

Kitasato's work with Professor Koch first attracted general attention and it was in bacteriology that the medical world first became familiar with the Japanese names. But now scarcely a volume of any important German periodical is without one or more contributions from Japanese medical men for the time being here in Germany, and some of them are the most striking articles of the volume. As a body, outside of the German students themselves, the Japanese constitute the most interesting feature of German university life, and one cannot fail to be struck with the evident purposiveness of their university work, and admire its results.

The system under which these results are attained is eminently worthy of consideration by those interested in

the development of medical education. After graduation in the Medical Department of the Japanese University, medical men who have distinguished themselves in their medical course as well as in the preparatory high school, are sent to Europe. Their preliminary education in the high school compares practically with that given in the German gymnasia, though less attention is given to Greek, so that they come to Europe with a breadth of mind and depth of culture well calculated to make them eminently receptive. They are sent to the German universities, exceptionally to others, at government expense, or at least with government aid.

These traveling scholarships are not hampered by too closely drawn relations. The special field of work is left to individual selection, and the place or places where it shall be pursued left to the student's choice, after he shall know enough of the medical situation in Europe to judge for himself. It is not expected that German methods will be mastered in a year or even two, at least three years being given to this post-graduate work, and sometimes five or more years. Japanese medical students are, as a rule, made readily welcome in German clinics and laboratories. There is beside the almost unconscious influence of the feeling of attraction for the quaint Oriental who has come such a distance for instruction, the knowledge that he is ready and willing to work, and that he will stay long enough to accomplish something and will not be interrupting his studies just when he has been trained to a point in observation where he might be able to prove his ability and enable his master to commend him with confidence.

Just the opposite state of affairs prevails to a great extent as regards American medical students and has made it, of recent years, more difficult for them than it used to be to get advanced work of a high order. Very few American medical students come to Europe for more than a year and those who do stay for two years have seldom contemplated so long a stay at the beginning and so their work has been arranged with the idea of departure after a year. As a rule, too, the American medical student who comes abroad has no definite idea as to what line of work he would especially care to take up, and has a number of other axes to grind. There is but a year abroad in his plans, yet he wishes to see London and perhaps Edinburgh for their literary and medical interest, he must see Paris and Rome for other reasons. His medical work he plans to do at Vienna or Berlin or both and usually he knows but very little German. Naturally not much really effective work is done, since there is no royal road and not even American dollars can pave a short cut, or American quickness and enterprise carry one quite to the Pierian spring of medical knowledge in a few short months.

At the end of the year scarcely more than the prestige of European study is gained, a smattering of German, sometimes of the most unsatisfactory character and a knowledge of German medical men's names and their faces that adds a passing interest to the perusal of German medical periodicals and literature. There is, of course, the broadening influence of travel, of association, and of contact even though but passingly with other methods and other ideas in medicine, that cannot fail to have its effect in after life, but compared to what might be accomplished by definite post-graduate work continued for two or three years, a minimum of good is done. Unless under exceptionally favorable circumstances it is only at the end of almost a year that the student is in a position to judge where and how he shall best secure what he wants.

Meantime, of course, there remains the interesting question as to when American universities and medical schools will seriously offer advanced post-graduate work, not only for their own, but for foreign medical students. In certain of the applied mechanical sciences Japanese students now go to some of the universities in the United States. In this matter the Chinese students will imitate them, I suppose, if our laws on the question permit it, unless our attitude toward the Chinese generally discourages them. The relations of China and Japan to Western countries generally are to be largely influenced in the future by the state of mind of educated men at home toward these countries. Opinions acquired during the plastic educational period in the midst of a people will remain, and the influence of German culture and the fact that the knowledge of the German language gives them their readiest view of European affairs through German spectacles, will always tend to draw the Orientals toward their old teachers the Germans in politics. In the present state of world politics, and the recent exhibition of German jealousy of the United States during the war, this is eminently undesirable. There is then a motive of patriotism in the matter that our recent entry into Oriental affairs makes extremely timely, and one cannot help but bewail the absence of effort in the matter.

Japanese feeling toward the United States as one learns it from the Japanese medical students here in Germany is of the most cordial character. There exists among the rising generation the sincerest admiration for the Western Republic whose rapid material advance and thoroughgoing, enterprising, business methods they would so gladly have their own rising country emulate. There is a sentiment in the matter then, that would draw these students to our shores for advanced medical work, if opportunities were but offered. With the advent of a new century, and the impulse that it should give to educational as well as other matters, it is not too much to hope that efforts in this direction will be made.

Recent expressions of German sentiment in our regard has made it even more desirable that Americans should find their post-graduate development at home, if possible. The inevitable entrance of the country into the world's politics makes it eminently to be desired that in educational development, as in everything else, there should be an independence that frees the country from any embarrassing foreign relations. The proper evolution of the patriotic idea is itself a function of this absolute independence in educational matters and constitutes an ideal to attain which unselfish effort some present sacrifices may well be made.

## TRANSACTIONS OF FOREIGN SOCIETIES.

### Paris.

HYDROCEPHALIC CHILD BORN IN AN UNUSUAL MANNER — SUPRAPUBIC SYSTOSTOMY FOR PROSTATIC ENLARGEMENT — NEW METHOD OF SUPRAPUBIC CYSTOTOMY — POSTERIOR COLPOTOMY FOR PELVIC ABSCESS—SUGAR AS A DIURETIC — PERFORATING ULCER OF THE STOMACH — ACTION OF THE GASTRIC JUICE UPON TOXINS — TRANSMISSION OF TOXINS FROM THE FETUS TO THE MOTHER — CHANGES IN THE ORGANS PRODUCED BY SEVENTY-TWO HOURS ON A BICYCLE—PROCEEDINGS OF THE CONGRESS FOR THE STUDY OF TUBERCULOSIS IN MAN AND ANIMALS

At the Academy of Medicine, July 26th, NARICH reported the case of a woman, aged thirty-six, who was in labor with her second child for fifteen hours when he was called to see her. The body and four limbs were already born, and examination failed to show any membranous spaces in the base of the skull, which was the only portion accessible to the finger. Attempts to apply the cephalotribe failed. Incision of the vertebral column allowed an enormous quantity of fluid to escape, and the hydrocephalic head was then born spontaneously. Examination of the fetal head showed a fracture in the occipital bone which made it possible for the contained fluid to escape in the manner described.

At the session of August 2d, PONCET spoke of the results of suprapubic cystostomy for prostatic enlargement, drawing conclusions from 114 operative cases. Eighty-seven of these patients recovered, 27 died. These cases may be divided into three groups, the first including 39 subjects without symptoms of infection or uremic poisoning. Only 2 of these died. The second group contained 29 patients with symptoms of uremic poisoning at the time of operation. Twelve of these died. In the third group were 46 cases with symptoms of chronic uremic poisoning. Thirteen of the patients in this group died. These figures show that the prognosis of suprapubic cystostomy depends upon the general condition; that is to say, upon the degree of uremic poisoning present at the time of operation. An early operation is therefore advisable. Some of the patients were striking illustrations of the advantage of this operation for prostatic enlargement. One of them who was operated upon at the age of 78, in the condition of coma, and with a temperature of 40.6° C. (105° F.), was alive and well 4½ years after the operation, being able to retain his urine for 3 or 4 hours during the day and longer at night. Another patient, 6 years after operation, was able to retain his water for from 3 to 5 hours, and then passed it in a stream through the hypogastric wound to the distance of 16 inches.

SUAREZ DE MENDOZA described at the session of August 23d a new method of incising the bladder above the pubes. The method commonly employed by dilating the rectum with a rubber bag is often the cause of temporary incontinence of feces and sometimes of rupture of the rectum. On the other hand, owing to inflammation, the distention is sometimes insufficient to accomplish the purpose of lifting the bladder out of the pelvis. To avoid these disadvantages the following method is recommended: The patient is placed in Trendelenburg's position, when a catheter passed into the empty bladder may be felt above the pubes below the reflexion of the peritoneum. It is cut down upon and serves as a guide for the passage of a thread before the bladder is opened. The catheter may also be utilized to irrigate the bladder immediately before the operation.

At the Surgical Society, July 20th, RICHELOT discussed the incision of the posterior cul-de-sac of the vagina for pelvic abscess, a method recently warmly advocated by Monod. While agreeing with the latter surgeon as to the advantages of this operation in suppuration of the broad ligament, or any abscess in Douglas' pouch not accompanied by lesions of the tubes or ovaries, he criticized in some respects Monod's optimistic views. It is difficult to determine whether the adnexa are diseased or not, so that in many cases an operation of this character will be of merely temporary benefit, and the patient will be left with a permanent fistula or, if this closes she may be subjected to the further devolopment of abscesses. In chronic suppurations, therefore, the incision of the vagina should only be performed to give immediate relief.

At the Medical Society of Hospitals, July 22d, ACHARD mentioned that polyuria often follows the injection into the tissues of a comparatively small quantity of sugar. This result may also be obtained by the ingestion of various sugars, but not so easily nor so surely. An appreciable effect has been produced by the injection of only 20 grains of saccharose; that is to say, about the fifth part of an ordinary lump of sugar. He proposes to use this remedy in cases of oliguria and has already done so in a few obstinate cases with good success.

WEIL mentioned the fact that glycosuria of diabetes may disappear under the influence of biliary colic. He has twice observed this phenomenon. In both of these patients the sugar reappeared after the colicky pain ceased. Its disappearance resulted apparently from an inhibitory action upon the hepato-pancreatic centers. This action deserves to be classed with the reflex phenomena sometimes produced by crises of biliary lithiasis, which, as every one knows, are often accompanied by polyuria and glycosuria of a transient character.

At the session of July 29th, GALLIARD told of a woman, aged 36 years, who had for a year signs of ulcer of the stomach. Suddenly there came a feeling of intense heat in the left side of the abdomen, followed by vomiting, meteorism, and the signs of acute peritonitis. Two weeks later there was in the epigastrium a swelling giving a deep sonorous percussion-note, and the sound of succussion. The tympanitic-note extended to the base of the left side of the thorax, and the sound of succussion was heard in this situation behind, the respiratory murmur being abolished in that region. There was no amphoric breathing, nor any metallic tinkling. A longitudinal incision made at the summit of the epigastric swelling gave exit to a great quantity of fetid gas and pus. The abscess cavity contracted rapidly and in a month the wound had entirely healed. It was supposed that the perfora-

tion of the stomach which had given rise to this abscess, had cicatrized at the time of operation.

CHARRIN gave the Biological Society, July 30th, the results of his investigations of the action of the gastric juice upon toxins. It has been shown that the gastric juice as well as the juice of the intestine diminishes the power of diphtheria toxin. It digests it in other words just as it would any other albuminous substance. A similar result is obtained if one mixes tetanus toxin with pepsin and dilute acid, and preserves the liquid for 24 hours at the body temperature. The toxin is also weakened by an exposure to bile and pancreatic juice. It is necessary to conclude, therefore, that the digestive juices have an important protective power against disease. This property may explain in part the power usually ascribed to the gastric and intestinal mucous membranes to resist the entrance of bacteria. At any rate it is easy to understand that gastro-intestinal troubles by altering the secretions in the alimentary canal predispose to the entrance into the system of microbes and their toxic products. The defensive mechanism is undoubtedly a complex one, but it is reasonable to suppose that these juices have at least as much power in the body as they have in a test-tube.

At the Academy of Sciences, August 8th, CHARRIN spoke of the transmission of toxins from the fetus to the mother. The facility with which toxins can pass from the mother to the fetus is well known. But the reverse of this process is equally possible. This was shown experimentally upon rabbits. A female was opened a short time before the birth of her young, and 1 c.c. of diphtheria toxin was injected in divided doses into the intestines of four of the young, their placentæ being avoided. In seven experiments of this nature, intoxication of the mother was produced, due to the passage of the placenta by the microbial products of the fetus. If a less virulent substance is used the injections may be several times repeated. By using sterilized cultures of pyocyaneus Charrin was able to render 3 out of 11 mothers relatively immune.

If then, poisons can pass from the fetus to the mother the same might take place when they were deposited in the fetus not by injection but had their origin in the father. From this results the interesting explanation of the phenomena of telegony so-called. If the elements of the fetus received from the father are of such a nature as to send into the mother a poison which will permanently affect her tissue-cells, making them more like those of the father, it follows that future children by another father may possess the characteristics of the previous father which have been so impressed upon the cells of the mother that her offspring partakes of their nature.

A the session of August 29th, REGNAULT and BIANCHI described the changes in the organs produced by a seventy-two-hour bicycle race. The examinations to determine these facts were made with a phonendoscope upon the first, second, and fourth winners of the race, immediately after its finish and again some days later. The abdominal organs, and notably the spleen, stomach, and liver, were notably diminished in volume. The subcutaneous fatty tissue had suffered in like manner. These changes were due to the lack of sufficient food and sleep, and to the excess of heat and excitement. The thoracic organs on account of the excess of blood coursing through them lost scarcely anything in size. The continual movements of the legs and pelvis, had displaced upward the organs of the abdomen and to a less extent those of the thorax. The right lung, on account of the weight of the liver, was lifted less than the left. The organs below the diaphragm were raised from one to two inches while the heart was displaced upward for fully as great a distance. It is easy to understand, therefore, the advantages of cycling in ptoses, pleurisy, and a too vertical position of the stomach.

The Fourth Annual Congress for the Study of Tuberculosis in Man and Animals was held in Paris from July 27th until August 2d. At the opening session, MARTIN read a paper upon the disinfection of the dwellings of the tuberculous, which has increased in Paris very rapidly of late. Whereas in the year 1892 only 4000 lodgings were disinfected on account of tuberculosis, the number for the first six months of 1898 is over 7000. One has only to think of the character of the dwellings of the very poor, where a whole family lives in one room, and many persons often sleep in one bed, to see how great is the danger of infection. Spittoons have been distributed, and attempts have been made to have them used, with a little water in them, the contents to be each day destroyed, and the spittoons boiled. Each week the patient's underclothes are to be boiled and washed. Many difficulties have been met, some of the patients being so poor that they could not afford to make a fire to boil anything, and others not having any underclothing at all. These prophylactic measures were in general well received. In some instances they had the unfortunate result to cause the afflicted individual to be regarded as a pestilence and even to be driven from the house.

LETULLE spoke of the hospital accommodation for tubercular patients in the city. Accommodations have been increased and facilities provided for the treatment of such patients with air, repose, and superalimentation; but there is urgent need for the erection by the city of numerous suburban hospitals which shall be given up entirely to the care of these patients. From a prophylactic point of view it is absolutely necessary that patients suffering from tuberculosis should be removed from their surroundings and cared for hygienically in buildings constructed for the purpose. Then as far as circumstances will permit, all those who have the disease should be cared for in such isolated institutions.

The reports of different experimenters upon Koch's tuberculin T.R. agreed in denying its value. "Despite the care and the time which we have given to this subject," said ARLOING, COURMONT, and NICOLAS, "it has been impossible to verify most of the affirmations of Koch in regard to his new tuberculin. The different results obtained can only be explained by the instability of the product or variations in the virulence of tuberculosis or differences in the technic. We deplore the lack of details furnished from Berlin. Our investigations have all led to the conclusion that tuberculin T.R. has no curative nor

preventive value in tuberculosis experimentally produced." LECLERG, after an experience with the tuberculin upon tubercular human beings said that its curative action is practically nil; and that while it is less dangerous than Koch's first tuberculin, it is by no means absolutely innocuous.

COURMONT tested the serum reaction in suspected tuberculous pleurisy, and found the agglutinating reaction present in ten out of eleven pleurisy patients who had the clinical signs of tuberculosis. In the eleventh patient there was no reaction, and this result was sustained by the absence of bacilli in the fluid while guinea-pigs inoculated with it failed to become diseased. In five cases of tuberculous peritonitis the reaction was present, while it was wanting in eight cases of ascites due to cirrhosis of the liver. The agglutination was likewise produced in eight cases of tuberculous synovitis, but it was less marked than in the cases of pleurisy and peritonitis. The proportions in which the tuberculous serum was employed were from 1 to 5, up to 1 to 20. If the proportion of serum to culture was less than 1 to 5, agglutination was produced with plain serum.

CALOT described his method for the treatment of tubercular joints without operation. He begins by making an intra-articular injection of 30 to 150 minims of naphtholcamphor every two or three days. After eight injections have been made, they are followed by two or three injections of iodoform-ether and then the joint is put at rest in compresses for three or four weeks. This completes the cure. Of forty patients so treated, thirty-nine were cured. The other had had the trouble for five years, and as it did not yield to treatment, an arthrectomy became necessary. In almost a quarter of the cases, the patients regained the partial or complete use of their joints. Calot expressed the opinion that one ought to attempt to regain motion in a cured tubercular joint in spite of the almost universal opinion to the contrary.

In a paper upon the "Surgical Treatment of Tuberculosis of the Bladder," DESNOS said that curative operations such as curetting and resections usually gave no relief but resulted in the rapid spread of the infection throughout the urinary tract. The painful forms of tuberculous cystitis often render a suprapubic cystotomy desirable, but one ought not to attempt the removal of tuberculous patches from the mucous membrane, no matter how easily this could be performed. If the patient will consent to the maintenance of the fistula for a year or more, the pain will entirely and permanently disappear, and often the lesions themselves will remain stationary because of the relief afforded by the absence of congestion of the bladder and the cessation of the act of micturition. When every operation is contraindicated, it is necessary to have recourse to instillations of sublimate, or to injections of oil containing guaiacol, and to insist on the measures which will improve the general health.

BOUCHARDE and CLAUDE reviewed the methods which have been employed to utilize the Röntgen-rays in the diagnosis of tuberculosis. In conclusion they said that the radioscope was able to furnish invaluable knowledge of tubercular processes, but that the technic of the matter is extremely delicate and requires experienced observers, and favorable conditions. When so employed the method is able to give evidence of tuberculosis which cannot be detected by other methods of investigation. Thus Kelsch, who examined 124 soldiers who did not give evidence of tuberculosis by the ordinary tests, found by means of the radioscope that 51 of them probably had pulmonary lesions. In other cases of bronchitis and convalescent grippe the radioscope is able to show the integrity of the apices. The radioscope is also of value in showing the functional power of the lung, and it furnishes in all cases a fixed measure of the extent of the lesions for future comparison. Because of the difficulties of technic it will never be in the hands of every one, but rightly used it will prove one of the greatest aids in diagnosis, supplementing the facts gained by the methods now in vogue.

WIDAL spoke of local tuberculosis in aged persons and heredity in connection with tuberculosis. Local tubercular lesions, whether bony or in the skin, are rare in advanced age, but when they do occur they do not differ from those seen earlier in life. He had observed a dozen instances occurring in patients of from seventy to seventy-eight years of age. In some of them the tubercular infection had remained latent a remarkably long time. One of them had had hemoptysis at twenty, but no further manifestations of the disease until just at the close of his life. Two patients aged seventy-eight, gave a history of tubercular submaxillary glands at the ages respectively of eight and ten years. After a quiet interval of nearly seventy years, the disease again broke out, thus showing that its virulence can be preserved in the human body for this great length of time. Two other patients showed a sort of retrograde heredity of the disease. Their children manifested its lesions long years before they showed any of the symptoms, which later developed in them.

## REVIEWS.

THE DETERMINATION OF SEX. By DR. LEOPOLD SCHENK, Professor at the Imperial and Royal University and Director of the Embryological Institute in Vienna. Authorized Translation. New York: The Werner Co., 1898.

WITH a work bearing the authority of the name of the director of the Vienna Embryological Institute for sale to physicians and laymen alike, the old "Marriage Guide," "Sexual Hygiene," and similar works usually found in the back row of the book-case, with their alluring chapters on "How to Have a Boy or Girl at Will"—these books, the favorites of our fathers and of our wicked adolescent days, must be relegated to oblivion. Perhaps this fate will not be theirs until Dr. Schenk's theory has been given the rigid test of practical results; for unless we are grossly mistaken, other recent writers have claimed that male offspring may be acquired by other means than by the obliteration of all carbohydrates from the mother's economy.

The gist of the theory propounded by the author under consideration has been mentioned in the MEDICAL NEWS

(July 30, 1898). Dr. Schenk believes that upon the nutrition of the mother depends the sex of the impregnated ovum: a woman whose tissues are in a state of perfect metabolism may produce males, while a woman whose tissues do not respond as well to their katabolic demands, is more likely to bring forth females. The urine Dr. Schenk regards as the index. A trace of glucose is held to be inimical to male progeny as indicating imperfect metabolism. Dr. Schenk corrects the diet until the urinary examination shows no further trace of sugar. The remainder of the book is taken up with a history of previous efforts to regulate sex in men and animals, and with a citation of cases which the author regards as a vindication of his theory.

We suggest that the theory be not applied until it is desired to influence the sex of the infants of multiparæ, for it might prove embarrassing to a young woman to have frequent urinary examinations demanded and her diet rigidly supervised for two or three months previous to her marriage for the purpose of influencing possible offspring.

DISEASES OF THE EYE. By EDWARD NETTLESHIP, F.R.C.S., Ophthalmic Surgeon at St. Thomas' Hospital, London; Surgeon to the Royal London (Moorfield's) Ophthalmic Hospital. Revised and edited by W. T. HOLMES SPICER, M.A., M.B., F.R.C.S., Ophthalmic Surgeon to the Metropolitan Hospital, etc. Fifth American, from the sixth English, edition. Philadelphia and New York: Lea Bros. & Co., 1897.

SINCE the appearance of the first edition Nettleship's text-book has occupied the first place as a student's guide. In this day of voluminous treatises and discursive handbooks the popularity of conciseness and accuracy is attested by the publication of a sixth edition. The work has been brought up to the most recent standpoint. A supplement on color-blindness and the practical examination of railway employees by Dr. William Thomson adds greatly to the value of the volume, which contains, in an appendix, a well-arranged ophthalmic formulary.

THE PHYSICIAN'S VISITING-LIST FOR 1898. Philadelphia: P. Blackiston, Son & Co., 1898.

THIS well-known visiting-list appears in its usual form. It is a convenient and compact little book of its kind.

ATLAS AND ESSENTIALS OF PATHOLOGICAL ANATOMY. By DR. O. BOLLINGER, Obermedicinalrat and Professor. Volume II. *Urinary Apparatus, Sexual Organs, Nervous System, and Bones.* New York: William Wood & Company, 1898.

WITH the present volume of *Wood's Medical Hand Atlases*, Dr. Bollinger's work on "Pathological Anatomy" is completed. The translator, whose name for some unknown reason never appears in these atlases, has accomplished his task in a satisfactory manner and has closely followed the German text throughout. The illustrations, as heretofore in this series, are superb and leave nothing to be desired. Altogether the work fulfils its purpose admirably and is a valuable addition to the ever-increasing number of books on this subject of medicine.

LECTURES ON THE THEORY AND PRACTICE OF VACCINATION. By ROBERT CORY, M.A., M.D., Cantab., F.R.C.P., London. New York: William Wood & Company, 1898.

THIS little book, comprising the results of the author's experience of twenty-two years of teaching and practising vaccination, would appeal to public health officials chiefly. It contains nothing new, but is filled with valuable statistical tables and compilations, which might be of especial value to those who are engaged in polemics with antivaccinationists.

## THERAPEUTIC HINTS.

***Acid Drink for Diabetic Patients.***—

| | | |
|---|---|---|
| ℞ | Acidi nitrici | *m.* lxx |
| | Glycerini | ʒ v |
| | Aq. dest. | Oii. |

M. Sig. To be taken during 24 hours; a small quantity at a time.

***Aromatic Cod-liver Oil.***—The following mixture is said to lose all odor of cod-liver oil, and to taste only of eucalyptus:

| | | |
|---|---|---|
| ℞ | Ol. morrhuæ | Oi |
| | Ol. eucalypti | *m.* lxxv. |

M.

***Formulæ for Employment of Chloral.***—

1. Hypnotic potion:

| | | |
|---|---|---|
| ℞ | Chloral hydrat. | gr. x–xxx |
| | Sodii bromidi | gr. xv–xlv |
| | Codein | gr. ½–¾ |
| | Syr. amygdalæ | ʒ ss |
| | Aq. dest. q. s. ad. | ʒ iv. |

M. Sig. To be taken at night.

2. For cardiac dyspnea:

| | | |
|---|---|---|
| ℞ | Chloral hydrat. | ʒ ss–ʒ i |
| | Potassii iodi | gr. xv–xxx |
| | Syr. acaciæ | ʒ iv. |

M. Sig. One teaspoonful every hour.

3. For convulsions:

| | | |
|---|---|---|
| ℞ | Moschi | gr. iii |
| | Camphoræ | gr. xv |
| | Chloral hydrat. | gr. viii–xxiv |
| | Yolk of egg | No. i |
| | Aquæ | ʒ iii. |

M. Sig. For rectal injection.

***For Scabies.***—

| | | |
|---|---|---|
| ℞ | Sulphuris sublimat. } aa<br>Picis betulini } | ʒ ss |
| | Cretæ preparat. | gr. xl |
| | Saponis viridis } aa<br>Adipis } | ʒ i. |

M. Ft. ungt. Sig. External use.

***For Chloro-anemia.***—

| | | |
|---|---|---|
| ℞ | Calcii phosphatis }<br>Sodii chloridi } aa<br>Sacchari } | gr. viii. |

M. Ft. chart. No. 1. One such powder four to six times a day.—*Moraczewski.*